FINAL REPORT

REVIEW OF DATA PROCESSING ACTIVITIES FOR THE CITY AND COUNTY OF SAN FRANCISCO

BOOZ-ALLEN & HAMILTON
Management Consultants

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I. INTRODUCTION

I. INTRODUCTION

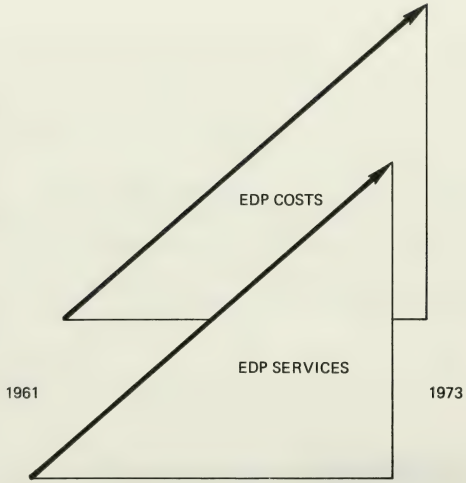
This document represents the final report with regard to a management audit conducted by Booz, Allen & Hamilton of the City and County of San Francisco's electronic data processing (EDP) activities.

- Authorized by the Finance Committee of the Board of Supervisors through its Budget Analyst
- Performed during the period of April-May-June 1973
- Presented to the Finance Committee of the Board of Supervisors, and to the EDP Priority Committee

EXHIBIT I

City and County of San Francisco

BACKGROUND



MANAGEMENT

1. BACKGROUND

(1) EDP Services Throughout the City and County of San Francisco (CCSF) Have Experienced Rapid Growth in Equipment Requirements Over the Past 12 Years

Equipment has expanded from small-scale tabulating installations within individual user departments to large-scale third generation data processing installations.

- Dual IBM Model 370/155's at City Hall Central Computer Complex with state of the art communications processors and sophisticated peripherals
- Separate IBM Model 360/50 at Public Utilities Commission (PUC) Computer Center with associated support equipment
- Several additional computer installations existing or at an advanced planning stage

(2) During This Same Period, Operating Expenses Have Increased Substantially and a Continuing Growth Trend Is Evident

- The budget level for the City Hall Central Computer Center is exceeding 10% growth rate compounded
- The budget level for the PUC Computer Center is following similar patterns since established two years ago
- The budget level on a citywide basis will exceed $20 million annually within the next few years if present growth rate continues

(3) Increasing Attention Is Being Directed Toward Effective Utilization of Present and Future EDP Resources

- Improvement of operating efficiency within EDP service departments through internal working committees, strengthening procedural standards, and upgrading planning and control mechanism

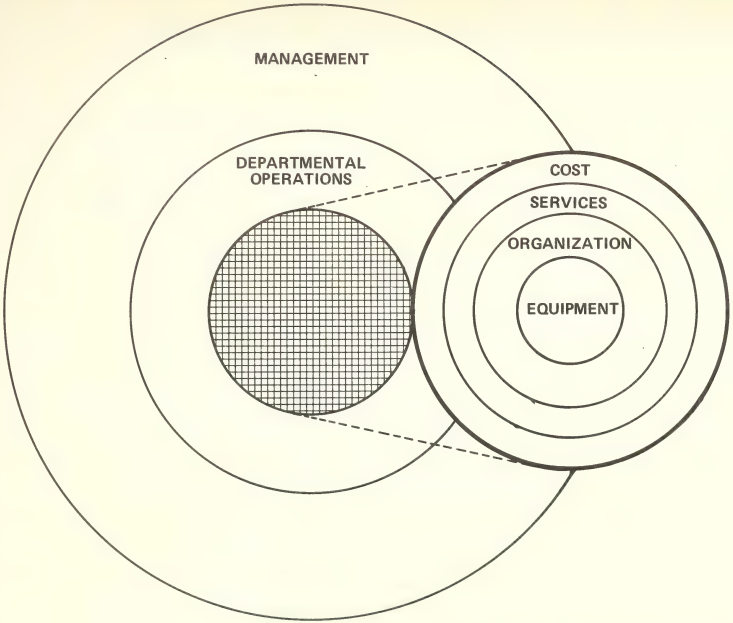
- Recognition by User Department Management of potential EDP applications, need for complementary manual systems, and the benefits associated with integrated information systems which cross established departmental organization boundaries

- Establishment of an EDP Priority Committee to function at a top management level and make appropriate recommendations to the Mayor and the Board of Supervisors

- Review of EDP Operations by Budget Analyst for the Board of Supervisors, with a recommendation for an independent management consulting firm to conduct a comprehensive audit (subject of this report)

SCOPE

CITY AND COUNTY OF SAN FRANCISCO



- ORGANIZATION
- CAPABILITIES
- EFFECTIVENESS
- DEMANDS FOR SERVICE
- ACQUISITION METHODS
- OUTSIDE SERVICES
- COMPETITIVE BIDDING
- COSTS
- EDP MANAGEMENT
- EDP PLANNING

2. SCOPE

(1) The Scope of This Management Audit Considered Data Processing Activities in Their Broadest Sense

Its purpose was to evaluate current data processing operations as well as projected user needs and related EDP support requirements, with emphasis on the City Hall Central Computer Complex and the PUC Computer Center.

The effort also included developing an understanding of the overall environment and the planning and control mechanisms involved in the development and implementation of management information systems.

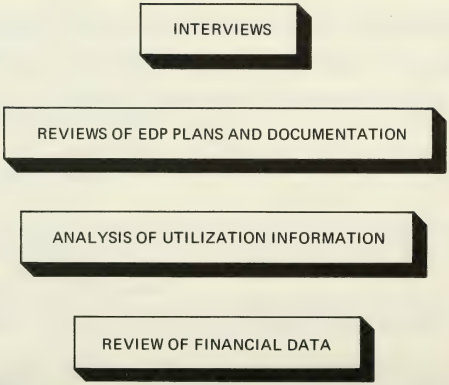
Specific tasks through which the management audit was conducted included:

- Analysis of present EDP organization and operational control
- Assessment of the current status and capabilities of the City resources for EDP
- Determination of the effectiveness of EDP services provided to user agencies
- Identification of anticipated future demands on EDP resources
- Investigation of current and projected purchase and lease arrangements for acquisition of computer equipment and software
- Investigation of EDP services which may be obtained through contract with private vendors
- Investigation of the feasibility of using competitive bidding procedures for the acquisition of EDP resources and services
- Review of existing EDP management and planning functions

EXHIBIT III

City and County of San Francisco

STUDY APPROACH



3. APPROACH

(1) Interviewed 110 Key Managerial and Technical Personnel

Conducted detailed interviews at every staffing level and within all organizational elements of the City Hall Central Computer Complex and the PUC Computer Center. Had discussions with each individual user department throughout the City currently receiving EDP services, usually involving several meetings with organizational components thereof. Met individually with each member of the EDP Priority Committee, including the four members from the outside business community, and attended scheduled bimonthly meeting.

(2) Reviewed EDP Plans and Systems Documentation

Evaluated current user manuals, programming standards, and operating procedures. Reviewed input forms and output reports of major data processing application programs. Examined EDP position descriptions and organization charts. Read pertinent portions of the Charter of the City and County of San Francisco, and consultant and committee reports back through the 1961 Crown-Zellerbach Report. Reviewed documentation related to Federally-funded applications, e.g., Police Department's Project CABLE, and that covered by bond financing, e.g., Fire Department's Project SAFER.

(3) Determined Utilization Effectiveness and Examined Related Financial Data

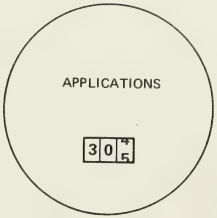
Inventoried current EDP hardware and software. Examined operational schedule approach and performed detailed operational review. Investigated effectiveness of programming systems and teleprocessing communications equipment. Collected and analyzed computer utilization statistics. Reviewed past and current financial information on the operation of both computer centers. Evaluated current lease/purchase arrangements and determined feasibility of contracting with third parties for EDP services.

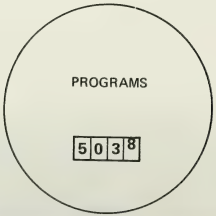
II. FINDINGS

EXHIBIT IV

City and County of San Francisco

SCOPE OF DATA PROCESSING





II. FINDINGS

1. THE SCOPE OF DATA PROCESSING ACTIVITIES IN THE CITY AND COUNTY OF SAN FRANCISCO ENCOMPASSES A MAJORITY OF ITS GOVERNMENTAL FUNCTIONS

The City and County of San Francisco is a major user of electronic data processing. EDP services provided to the City cover a broad spectrum of applications and many levels of sophistication.

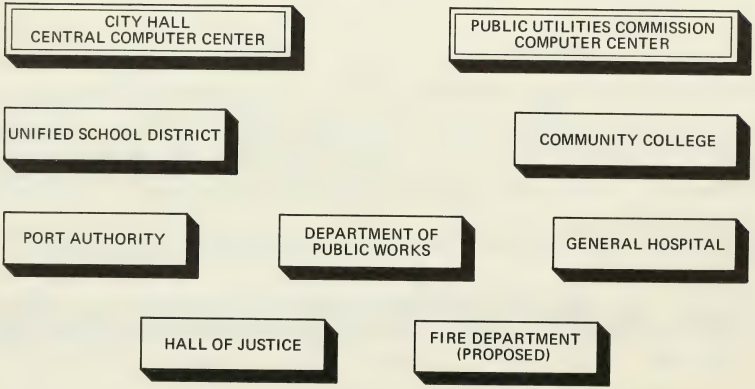
More than 40 City departments or agencies receive EDP services directly. Most others receive benefits through such systems as payroll and budget preparation. Services through the Civil Service Commission and other departments impact all City employees, and a majority of the citizens of the City and County are serviced indirectly through such agencies as the Assessor's Office and the Police Department.

The exhibit opposite highlights some of the other considerations associated with the scope of EDP.

EXHIBIT V

City and County of San Francisco

EDP INSTALLATIONS



(1) There Are Two Major EDP Service Centers and Several Smaller Installations With the Responsibility of Providing EDP Services To Users Throughout the City

The computer center located at City Hall and the Public Utilities Commission Computer Center located at the Water Department serve a vast majority of the City's EDP users. The other installations serve the specific needs of their managing agency.

- The City Hall Central Computer Center contains two large-scale computer systems. One of these handles the remote terminal applications through three small front end communications processors. The second is used for the large batch or cyclical applications. In addition, there are two small systems for smaller batch or cyclical jobs.

- The Public Utilities Commission Computer Center has a large IBM 360/50 with a communications adapter for handling both batch and terminal applications.

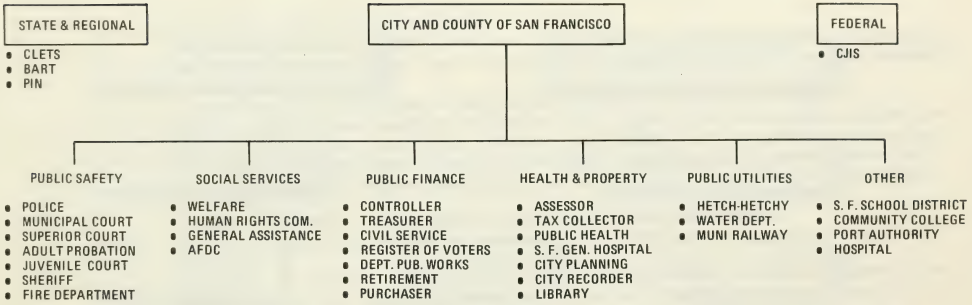
- The exhibit opposite reflects other installations in the City. All these, with the exception of Department of Public Works and the Hall of Justice, are considering major upgrades to larger, more expensive systems. In addition, the Fire Department will also install its own system during the next fiscal year. The Police Department Systems, now a part of the City Hall complex, will also be relocated to the Hall of Justice.

- The Unified School District, Community College, and Port Authority are organizationally autonomous from the Central Facilities. The others do have organizational and administrative ties with the City Hall Center.

EXHIBIT VI

City and County of San Francisco

EDP USERS



(2) Computer Facilities in the City Provide Services To More Than 40 Departments or Agencies

Reflected above are the major users of data processing services as organizationally supported by respective EDP Centers.

- The City Hall Central Computer Complex is organized into four principal system areas: Public Safety Systems, Public Finance Systems, Health and Property Systems, and Social Services Systems.

- The PUC Computer Center provides services to three principal users: Water Department, Hetch-Hetchy, and Municipal Railway.

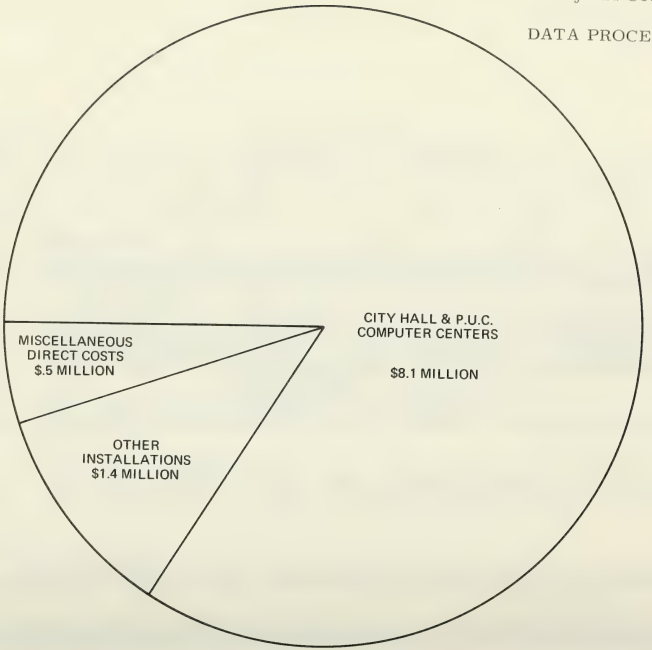
- Other users operate their own facilities with little interaction with City Hall or the PUC Centers. Regional, State, and Federal agencies have computer facilities physically within the City but are completely independent from an organizational viewpoint.

- A number of departments within the City are not presently receiving EDP support and are not reflected on the exhibit; some of these departments have extensive potential applications.

EXHIBIT VII

City and County of San Francisco

DATA PROCESSING COST SUMMARY



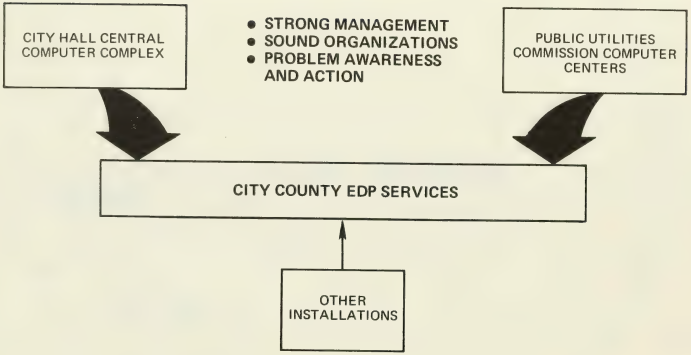
(3) Data Processing Services Currently Cost the City Approximately $10 Million a Year

Direct service costs for the installations, equipment, personnel, systems, and related expenses account for approximately $9.5 million. Miscellaneous direct costs include supplies, equipment, and personnel costs absorbed by using departments. These costs are conservatively estimated at $.5 million annually.

EXHIBIT VIII

City and County of San Francisco

EDP OPERATIONS OVERVIEW



2. OPERATIONS IN THE TWO EDP CENTERS PROVIDE A MAJORITY OF EDP SERVICES TO THE CITY AND ARE JUDGED TO BE BASICALLY SOUND AND WELL MANAGED

The Review of EDP operations focused on the City Hall Central Computer Complex and the PUC Computer Center and findings noted below apply equally to these two centers unless otherwise indicated.

Areas requiring improvement were found to have been identified by management of the Centers and corrective actions are underway in most cases.

(1) Organization and Operating Procedures of the Two Centers Are Judged as Capable of Meeting Current Requirements

- Mission and Role--Internal procedures and guidelines developed by EDP define their role and responsibility, however, these do not extend to cover user responsibilities in the planning and development of systems. The mission and role of central EDP, its jurisdiction and level of service has not been clearly defined by the city nor is it understood fully by the users.

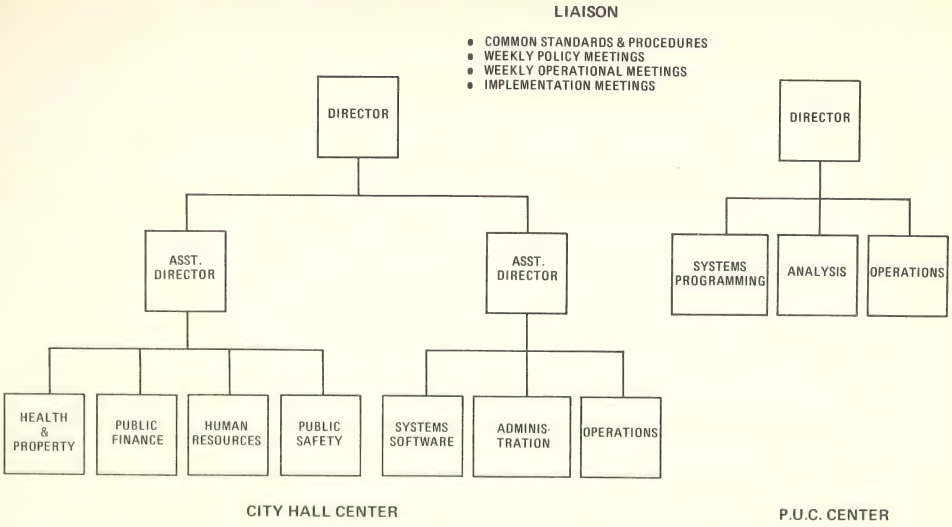
- Organization Structure--Differences in the numbers and types of users served by each center has resulted in differing organization structures. Both are capable of handling the unique requirements dictated by each center's clientele.

- Operating Standards--The City Hall Computer Center maintains the Operating standards for citywide EDP. These standards are also used by the PUC center with necessary changes as dictated by operational differences between the two organizations. Standards are judged as comparable to industry standards and are generally followed.

EXHIBIT IX

City and County of San Francisco

EDP ORGANIZATION AND MANAGEMENT



- Operational Interfaces--Operational interfaces within departments and between the two centers provide strong liaison and understanding between units. Weekly meetings occur at various levels to review topics of operating interest. Specific operational reviews occur prior to the implementation of new procedures or systems. A memorandum of understanding from the Controller to the Board of Supervisors in March of 1972 sets forth in some detail the procedural liaison to take place between the two centers. The provisions therein are being complied with.

(2) The Approach Toward Management and Staffing is Good; However, Turnover of Employees Has Seriously Impacted the Effectiveness of City Hall Center Services

- Management Objectives, Accountability and Responsibility--While management objectives for EDP at the higher levels have not been established, specific responsibilities have been assigned at the management and supervisory level throughout the EDP organizations. Each supervisory position is vested with the authority necessary to carry out its duties. Intra-departmental accountability for performance and results is judged as satisfactory. Individual job descriptions are deemed both accurate and adequate.

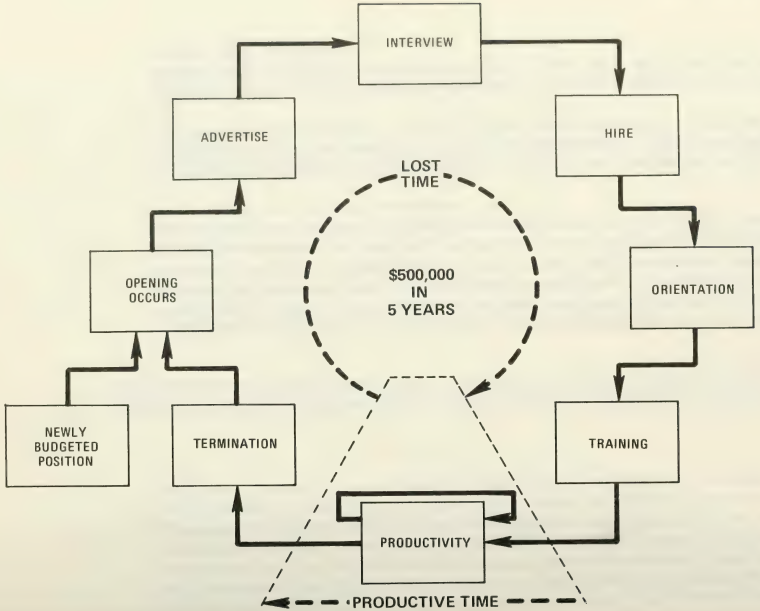
- Personnel Selection and Performance--The personnel selection process operates well and the quality and technical competence of staff members is uniformly above average. As noted above, retaining staff is a key problem.

- Training--The in-house training programs for new employees and regular staff provide both the basic training required and keep the staff abreast of the latest technological advances.

EXHIBIT X

City and County of San Francisco

EMPLOYEE TURNOVER



Employee Turnover--Turnover of employees has been very high in the City Hall complex. Over 140 separations have occurred during the past five years. Over 60 of these occurred in areas of systems analysis and programming. This has resulted in serious project delays. The exhibit opposite illustrates the events which must take place in order to bring an employee to a productive level. While this is relatively short for such positions as keypunch operator, a programmer will require four to six months to become productive. This lost time has cost the city over $400,000 during the past five years.

Additionally, indirect losses occur. For example, a programmer may leave a job uncompleted which must be restarted and months of effort may be lost.

This loss is conservatively estimated at $100,000. The principal reason given for turnover has been that these positions were temporary. Civil Service Exams have recently been conducted and will provide permanent status. It is interesting to note that high turnover has not been experienced in the PUC Center nor within specific programming sections at City Hall. The management is aware of this and is investigating other possible causes of turnover. Turnover has resulted in a constant level of understaffing. Last year, for example, over $114,000 for salary appropriations was returned to the central fund.

EXHIBIT XI

City and County of San Francisco

EQUIPMENT UTILIZATION AND PERFORMANCE

CITY HALL CENTER UTILIZATION AT 78% AND INCREASING

PUC UTILIZATION IS LOW BUT EQUIPMENT HAS HIGH EQUITY AND WILL MEET FUTURE NEEDS AT MINIMUM COSTS

FUTURE UTILIZATION CANNOT BE PREDICTED ACCURATELY BEYOND NEXT FISCAL YEAR

SYSTEM PERFORMANCE HAS RECENTLY IMPROVED TO 95%

(3) Data Processing Equipment Utilization Varies Greatly Between the Two Installations But Systems Performance Is High in Both Cases

- Equipment Utilization at City Hall--During the past fiscal year the large scale computer systems averaged 64% time utilization. This is currently at 75% and increasing. From a core requirements standpoint these systems are nearing capacity and will not be able to handle the projected work load through the next fiscal year. The EDP Priority Committee has been asked to take action with regard to a change in equipment that will eliminate both considerations.

- Equipment Utilization at PUC--The system at the PUC is operating well below industry standard utilization. This system, however, has a very high equity and will be fully owned by the city next year. No consideration should be given to changing to a smaller or less efficient system for that reason. It offers growth potential for PUC applications for the next several years.

- Future Utilization Requirements--Utilization projections beyond the next fiscal year can only be intuitive in nature due to the lack of a city wide master plan for EDP. It should be noted that the incremental cost associated with the current recommendations for upgrade of equipment from 370/155's to 370/158's is a small (.5%) percentage of the total projected operating expenses.

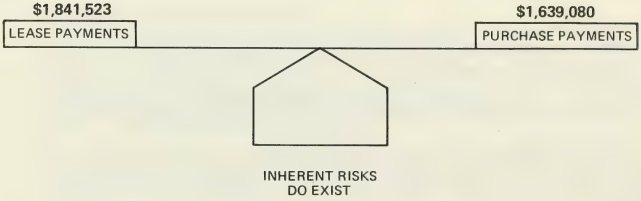
- Systems Performance--Systems up-time is rated at over 95% for all major pieces of equipment. The more recently installed COMTENS and their associated communications equipment experienced some difficulty but performance has improved substantially during recent months. The previous problems with these systems resulted in valid complaints with regard to system response and down-time from users of teleprocessing.

EXHIBIT XII

City and County of San Francisco

EQUIPMENT ACQUISITION

- COST ANALYSIS
- TRIAL BEFORE PURCHASE
- BALANCED APPROACH



(4) The Equipment Selection and Acquisition Process Has Improved Substantially but Inherent Risks Remain Due to the Lack of an EDP Master Plan for the City

There is a proper balance of leased versus purchased equipment. Sound cost analysis is accomplished prior to determining the method of acquisition. Equipment is often brought in on a trial basis to determine its ability to meet performance requirements prior to the final decision.

- Equipment Acquisition--Prior to the establishment of the EDP Priority Committee, equipment acquisition was based on the recommendation of the Director of EDP. There is a general consensus throughout the city that under the previous EDP Director, the purchase and installation of EDP equipment well preceded its justification relative to application requirements.

- Equipment Lease vs. Purchase--Equipment under lease consist primarily of those items subject to near term technological improvement or short life expectancy. This equipment will cost the city 1.8 million dollars in payments during the coming fiscal year. Purchased equipment consists primarily of large cost items with significant cost advantages over long term rental. Purchased equipment will cost the city approximately 1.6 million dollars in the coming year. With a large portion of this equipment paid for in 1975, the city will save over a million dollars when compared to rental prices.

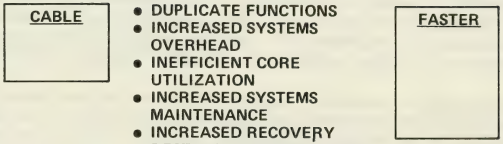
- Acquisition Risks--The absence of a Master EDP utilization plan forces decisions based on intuitive guesswork instead of valid utilization projections. The necessity for upgrading to 158's from 155's installed less than two years ago is a current case in point.

- PUC Equipment Vendor Change--Equipment selection and placement of an IBM system in the PUC center was seriously questioned by Burroughs in 1972. A detailed review of related documentation and a detailed knowledge of the processing and compatability requirements indicates that the Burroughs claims were largely unsubstantiated and based on extremely limited investigation on their part.

EXHIBIT XIII

City and County of San Francisco

TELECOMMUNICATIONS



(5) Systems Software Selection and Development has been Sound for Basic Systems, but Inadequate Planning has Resulted in the Development of Two Telecommunications Monitors

The "Faster" system was originally developed by the city and IBM to meet the telecommunications requirements known at that time. The implementation of the new CABLE system resulted in the development of a second monitor to handle the specific requirements of that system. While these two could be combined, the cost of such a conversion without a plan encompassing future requirements for such a monitor would not be justified. These dual monitors and the short term requirements of each are one of the key reasons the current City Hall systems are nearing capacity.

EXHIBIT XIV

City and County of San Francisco

COMPUTER OPERATIONS AND PROCEDURES

CURRENT PROBLEM AREAS	ACTION BEING TAKEN
SECURITY OF INPUT AND OUTPUT	NO – SEPARATION OF PHYSICAL FACILITIES MAKE SECURITY DIFFICULT TO ENFORCE AT THIS LEVEL
INFLEXIBLE & CUMBERSOME SCHEDULING SYSTEM	YES – ALTERNATIVES ARE BEING CONSIDERED
CUMBERSOME TAPE LIBRARY INVENTORY SYSTEM	YES – ALTERNATIVES ARE BEING CONSIDERED
LACK OF HISTORICAL DOWN TIME STATISTICS	YES – NOW BEING ANALYZED MANUALLY
HIGH VOLUME OF MANUAL INPUT/OUTPUT CONTROL ACCOUNTING	YES – IMPLEMENTING RECOMMENDED IMPROVEMENTS. SIGNIFICANT IMPROVEMENT WOULD REQUIRE TOTAL SYSTEMS REDESIGN

(6) Computer Operations and Security Procedures While Generally Effective Are Being Reviewed by Management and Improvements Can Be Anticipated in Most Problem Areas

- Security--EDP security procedures properly safeguard data files and computer operation sites. However, the dispersion of input and output data handling components make it particularly difficult to enforce security at that level.

- Operations Improvements--A recent independent study authorized by City EDP management of computer operations has resulted in several recommendations for improvements which are now being implemented.

- Operational Procedures--Operational procedures are designed to make the most efficient use of the equipment. Weaknesses noted during this study with regards to scheduling are currently being analyzed by EDP operations for better alternative methods. Additionally, the tape library inventory system will be enhanced.

- Down Time Procedures--The Operations Logs on computer down-time and reruns meet current needs. Statistical information with regards to specific causes could be very meaningful if this system were mechanized.

- Control--An input/output control section has the responsibility for controlling and distributing systems information. They are effective but due to a number of antiquated systems, considerable excess reconciliation effort is required.

EXHIBIT XV

City and County of San Francisco

CITY HALL FACILITIES

COMPUTER FACILITIES AT CAPACITY

INPUT AND OUTPUT CONTROL IN FIVE SCATTERED LOCATIONS

CENTER MANAGEMENT SEPARATED FROM BOTH PROGRAMMING AND OPERATIONS

OFFICE FACILITIES ARE CRAMPED AND POORLY LAID OUT

(7) Physical Facilities for Both Equipment and Personnel Are Scattered and of Minimum Adequacy

- Computer Facilities--The computer facility in City Hall is layed out in a "bowling alley" fashion providing inherent operational inefficiencies. This space is at capacity and any major addition of equipment will cause serious placement problems.

- Office Facilities--Facilities for programmers and analysts in the City Hall complex are cramped and poorly layed out, and do not provide a good working environment.

3. THE PROCESS OF PROJECT PLANNING AND SYSTEMS DEVELOPMENT REQUIRES IMPROVEMENT, MORE FROM A STRONGER ROLE AND INVOLVEMENT OF OVERALL CITY MANAGEMENT AND USER DEPARTMENTS THAN WITHIN THE EDP SUPPORT CENTERS THEMSELVES

The Data Processing Centers of the City are essentially service organizations with the objective of providing for the development of computer application systems and the processing of these application systems to meet user defined information requirements. The computer system and the activities directly associated with it are a link, albeit an important link, in the overall flow of data within the total information system. The computer should not dictate the overall operation of the information system. Nor should the center providing data processing services dictate the information requirements of the user.

EXHIBIT XVI

City and County of San Francisco

PROJECT PLANNING

COMPLEX EDP OPERATIONS • REQUIRE • DETAILED PLANNING

- $10,000,000 BUDGET
- 8 INSTALLATIONS
- 500 EMPLOYEES
- 300 APPLICATIONS
- 5000 PROGRAMS

- CITY-WIDE EDP MASTER PLANS
- LONG RANGE DEPARTMENT PLANS
- EDP PRIORITIES
- COST/BENEFIT ANALYSIS

(1) Project Planning and Authorization is Conducted in an Atmosphere in Which User Departments Rely Too Heavily on the EDP Service Agencies for Identifying, Evaluating and Deciding Which EDP Projects the User Should Undertake

- User Master Plans--User departments have not developed a comprehensive master plan for EDP. While the Police Department through CABLE and the Fire Department through SAFER have made progress in this regard, most user departments have not made a beginning. Users have assumed planning to be a function of the respective EDP Center. This is totally inappropriate. Planning for EDP must include the broader aspects of total information flow and operation within the user department. This responsibility cannot be abdicated to an organization whose role is one of service and support.

- Project Plans--Individual project planning efforts are geared to a short-range basis with limited scope solutions to identified needs. This is primarily the result of the City's approach toward budgeting which is essentially oriented to the requirements of a single fiscal year. The exceptions to this are those federally funded programs such as CABLE which requires detailed plans prior to consideration of grant applications.

- EDP Project Planning Procedures--A systematic and formal approach toward project planning from the perspective of the Centers has been initiated within the last year. The users EDP requirements are identified on EDP Form 148, Service Request, which is used as the basis for determination of EDP resource requirement and costs. Information contained on the form is basic and abbreviated. The Centers' reply to the user is via the Service Proposal, Form 149. This proposal outlines a "Preliminary Cost Estimate" and a "Preliminary Work Plan and Schedule." The level of detail reflected on these forms is not sufficient for project planning and control purposes.

- Cost/Benefit Analysis--Little evidence was found of performing a detailed cost/benefit analysis or exhaustively evaluating alternative approaches. For example, adequate evaluations are not made of requests for the conversion of manual procedures to automated data processing to determine whether the resultant efficiency, if any, would justify the cost of conversion.

- Project Planning Priorities--Priorities are established on an intradepartmental basis as opposed to an interdepartmental or citywide basis. The PUC Center has shown substantial improvement in this area through the establishment of priorities on a Center-wide basis but still lacks the depth required.

EXHIBIT XVII

City and County of San Francisco

SYSTEMS DEVELOPMENT

SYSTEMS DEVELOPMENT CHARACTERISTICS

- UNSOPHISTICATED
- USE OF OUTSIDE ASSISTANCE
- CRITICAL ITEMS COMPLETED ON TIME
- MANUAL OPERATIONS NOT CONSIDERED
- USERS NOT EQUIPPED
- LACK OF PROJECT CONTROL

(2) Systems Development Efforts Have Been Very Successful in a Number of Areas. In Areas Where This Has Not Been the Case, the Underlying Cause Was Usually Determined To Be the Result of the Programmer/Analyst Turnover Situation

- Level of Sophistication--With the exception of CABLE and a few smaller systems, application programs are not of a highly sophisticated nature. A remote terminal with immediate data retrieval capability does not necessarily reflect a highly effective or sophisticated systems design; nor that the application is the most cost effective approach.

- Third Party Involvement--The involvement of third parties in systems development has been extensive in every major system implemented over the past few years. Examples of such systems include CABLE, SAFER, FASTER, and the ABA Case Data System. Substantial sums are involved in third party usage. The CABLE System, a three year project, involved contractual payments to Systems Science Development Corporation of approximately $250,000 annually.

- Manditory Changes--Without a single exception, EDP incorporated the many legislative type changes within ongoing application programs on or before the mandatory deadline date. This is particularly praiseworthy, as legislative bodies rarely consider the programming difficulties involved; many new laws or amendments dictate substantial changes be fully incorporated within an extremely short response time. These changes were incorporated inspite of the programmer/analyst turnover difficulties noted earlier.

- Manual Interface Considerations--In some cases, EDP and the user department, jointly, failed to give adequate consideration to the difficulties involved in developing and implementing new systems in the user departments environment. A system installed without such considerations can result in cumbersome and ineffective interfaces with manual operations, additional operational burdens on the user, and uncooperative clerical employees. While losses of this nature are difficult to quantify, they would in the range of hundreds of thousands of dollars. The City's specific experiences with the so called Integrated Payroll System (IPS) and more recently the Hospital and Municipal Railway are examples.

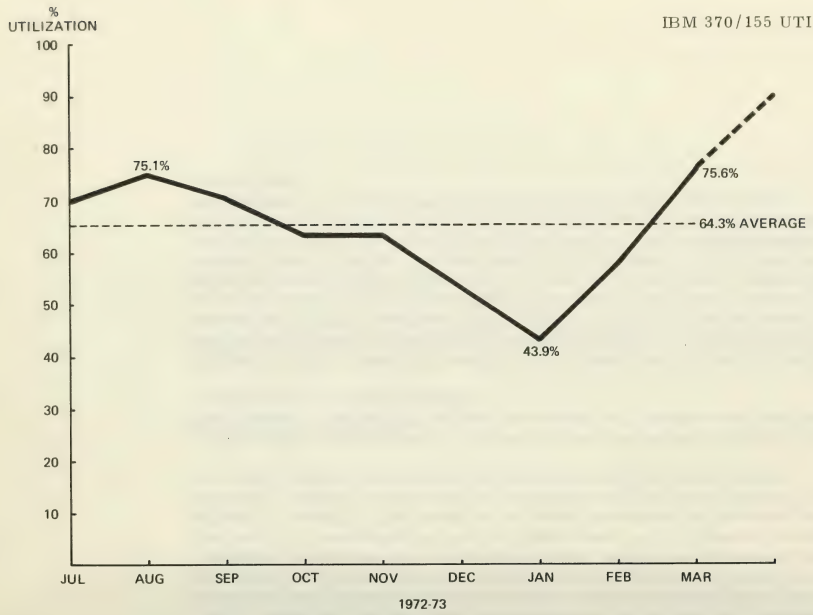
- Departmental Interfaces--The majority of user departments are not equipped to fully evaluate Central EDP service proposals or to develop and implement complementary manual systems.

- Project Control--Generally speaking, user departments failed to exercise their project management responsibility and thereby insure an effective and efficient utilization of EDP resources in their behalf. While user departments tend to maintain an appropriate arms length relationship with outside service bureaus, when dealing with EDP Central Services this is not the case. Without the detailed level of project planning previously discussed, it is difficult to compare progress to the plan and maintain project control. An improved project accounting and control system (PAC) is being implemented by the City Hall Complex. This system will provide the basis for more effective internal project management.

EXHIBIT XVIII

City and County of San Francisco

IBM 370/155 UTILIZATION



4. BOTH SYSTEMS UTILIZATION AND REPORT UTILIZATION MAY BE CONSIDERED SATISFACTORY; HOWEVER THERE ARE A NUMBER OF ASSOCIATED FACTORS WHICH SHOULD BE APPRECIATED

(1) Computer Systems Utilization on the Two Large Systems at City Hall Averaged 64.3% But Was Erratic

- An acceptable level of utilization is 60 to 70%. The City Hall Center is now at 75.6% utilization and increasing.
- The peak in the early part of the fiscal year is primarily attributed to test time for new user applications, particularly for the Police Department's CABLE system which used 120 hours in the month of September alone.
- The increase in March is the result of operational increases in the CABLE system. Projections of this and other application increases indicate production will exceed capacity during the current fiscal year.

S.F. PUBLIC LIBRARY

EXHIBIT XIX

City and County of San Francisco

SYSTEM OVERHEAD

(2) Systems Overhead Consumes 30% of the Computer Time Utilized in City Hall

Systems overhead consists chiefly of Research and Development projects and administrative applications which are not directly chargeable to specific users. The current level of 30% is acceptable.

(3) User Related Activities Consume 70% of the Computer Time Utilized

As a part of this study, utilization for the eleven major users was analyzed for both production and test time. Appendix A contains illustrations for each in graphic form.

(4) Computer Utilization Statistics Are Only a Limited Indicator of Performance

They do not consider the efficiency of the individual programs nor do they take into account such factors as down time, reruns, or system availability requirements for telecommunications.

(5) Report Utilization Is Judged Effective, Generally Across All User Departments

- Level of Utilization--When considering the number of reports and their frequency, it is estimated that the potential for improvement is no more than 10-15%. In other words, present report utilization stands between 85 and 90% and therefore potential cost savings in this respect are minimal. (Approximately $30,000 a year.)

- Duplicate Information--Many reports contain information or data which is duplicated between various departments. Cost savings in the range of $200,000 a year could be realized in the report area alone through the effective design of integrated multi-departmental information systems.

- Microfilm--The City Hall Center is currently conducting a study of microfilm and its application. This study is anticipated to point toward significant cost savings, not only for current reports, but also for the mass of records that must be, and are currently, maintained by the city.

EXHIBIT XX

City and County of San Francisco

MANAGEMENT PLANNING

ORGANIZATION
PHILOSOPHY
BUDGET PROCESS
EDP PRIORITY COMMITTEE
INTEGRATED DATA BASE SYSTEMS
EFFICIENCY

5. THERE IS A LACK OF OVERALL PLANNING, DIRECTION, AND COORDINATION OF MANAGEMENT INFORMATION SYSTEMS MATTERS THROUGHOUT THE CITY-COUNTY GOVERNMENT. IMPROVEMENTS ARE NEEDED TO INCREASE COST EFFECTIVNESS OF EDP OPERATIONS

As indicated earlier, the City's data processing operations are basically sound and well managed. Their resources, however, could be utilized by the City in a more effective manner. The key to success in achieving a greater cost effectiveness of EDP operations lies in improving top-level management planning and control.

(1) Existing Organization Structure and Operating Environment Seriously Impedes the Job of Planning and Implementing Management Information Systems

Whereas it is fully recognized that the city-county governmental framework is not going to be re-structured solely in the interests of achieving more effective management systems, the constraining relationships must be appreciated. Organizational structure problems and those related to the management information systems employed by the organizations involved are inherently inseparable.

The City and County management and administrative personnel are in general highly qualified and motivated and can manage effectively inspite of a less-than-optimum organization structure or management system. Their task, however, in an operating environment as complex and demanding as that in City and County is infinitely more difficult under these conditions. Establishment of a top-level planning and control mechanism which could compensate for organizational related difficulties would be of immense benefit to operating department management.

(2) Philosophy of Management With Respect to Automated Systems Has Not Been Established at CCSF-Wide Level

A number of issues require resolution at the highest levels of city-county management. While a wide range of opinions were expressed at the interviews conducted during the course of this audit effort, a documented and approved expression in quantative terms was nowhere in evidence. The range of issues expressed were inclusive of the optimum degree/approach in areas of:

- Centralization/decentralization of facilities
- Hardware configuration and lease/purchase arrangements
- Application package sophistication level
- Third-party contracting for services
- User Department Systems Analyst staffing
- Cost/benefit evaluation criteria

Considerable confusion exists with respect to the role and mission of the City Hall Central Computer Complex and to a lesser degree, of the PUC Computer Center. Their jurisdiction and level of service has not been clearly defined and documented by city-county management, nor are respective responsibility relationships clearly understood by the user. While these centers have defined their role and responsibilities from an internal point of view, complementary external definition is required.

The feasibility and desirability of establishing working relationships with other computer facilities is another subject area which merits senior management level attention. These are computer installations physically located within the CCSF but which are organizationally autonomous to the Mayor and Board of Supervisors.

(3) Budgetary Practices and Financial Management Approach Are Not Conducive To Multi-Departmental/Multi-Year Management Systems Planning

The budget system employed within the city is an "Object of Expenditure" or "Line-item" type in which emphasis is placed on items to be purchased, such as labor, materials supplies instead of on the activities to be performed and the services to be rendered.

The disadvantages associated with the exclusive use of such a budgeting system are well documented in the Crown-Zellerback Report of June 1961, as well as in more recent in-house and consulting reports. These reports indicate a need for employing a "Work Program" concept of budgeting.

(4) The EDP Priority Committee Was Recently Established To Prepare and Recommend a Five-Year Utilization Plan Together With a Cost-Benefit Analysis and a Financing Plan

This committee was established by Ordinance Number 262-72 to function at a top management level. It was created to determine and recommend to the Mayor and Board of Supervisors a program for present and future utilization of EDP techniques; this is inclusive of review and approval of:

- All major changes proposed in equipment configuration
- All major changes in operating programs
- All new programs (projects)

Section 3.019 indicates that the EDP Committee: "shall have the duty and power to establish rules and regulations for the conduct of its affairs and for the procedures to be followed by the several boards, commissions and departments in submitting recommendations to the Committee. The Committee shall have such powers as may be necessary to enable it to fulfill its functions."

The duties and powers as specified within the ordinance are deemed appropriate and timely. The EDP Priority Committee is the only vehicle in view to accomplish this vitally necessary task; plan, direct, and coordinate overall Management Information Systems matters across the City-County Government.

(5) Integrated Data Base Systems Are Becoming the Focal Point for Achieving Long-Range Operational and Economic Benefits

There is an increasing realization within the City of the inherent economic and operational advantages of broadly based integrated information systems. In these integrated systems, selected data elements from a number of departments sharing a common management systems interest are assembled into a centralized data bank. The data is maintained in a quickly accessible form and is used by participating departments on an as-required and when-required basis.

An Integrated Justice System Committee is presently active in which EDP personnel and various user department representatives participate. Their objective is to develop an overall plan for implementing an integrated system across all areas of criminal justice by building on operational CABLE modules.

A Common Property Information System working group was formed by the Department of Public Planning in 1970. More than 20 city departments interested in the development of an integrated property information system designated representatives to participate in the common effort, and central EDP supplied technical assistance. Inspite of a good start and admirable efforts on the part of City Planning, progress did not advance past the preliminary planning stage.

Management in the Civil Service Commission, Retirement System, and Health System expressed a strong desire for an Integrated Personnel System based upon an upgraded payroll system.

There is a wide consensus across user department management that the focus in the development of advanced computer applications should be centered on integrated information systems along the examples noted above. This belief is well-founded and efforts should be accelerated in this direction.

(6) Effectiveness of Present Automated Applications and User Manual Procedures Are Key Factors in Management Systems Planning Process

In general, throughout the city-county government, there is excessive manual processing which could be efficiently done by EDP. The potential for additional EDP applications is extensive; some sizeable city departments have very little or no automated applications whatsoever.

In addition, many so-called automated systems involve a very high degree of manual handling and processing. These systems appear automated but they are, in actuality, extensive manual systems with a degree of automation involved.

Many computer programs are essentially manual systems which were "lifted intact," or almost so, and placed on the computer. Other computer programs were designed many years ago and have had extensive "patchwork" program maintenance. Usually, they were geared to operate on much slower computer hardware than that which is currently on hand. These factors impact heavily on overall system operating efficiency. Even some of the computer applications employing teleprocessing techniques and considered in the advanced system category will require redesign, especially to mesh with subsystems within integrated data base systems, as described above.

The effort on the part of many user departments to develop and install complimentary manual systems is weak. Correspondingly, user obligations with respect to new automated systems are hardly ever adequately specified. On several occasions, an excellent automated system, perhaps employing both teleprocessing and micro-fishe techniques, was found to be "surrounded" by poor manual systems. In the words of one user department manager, this is equivalent to "having a Cadillac yoked to a Model-T."

Experience has indicated several other related factors. One is that departmental records in many large organizations are ancient and the effort required to "clean-up" the data before it can be input to a computer system is best expressed in man-years. Another aspect is that it is definitely not practical to attempt to implement, other than very gradually, a system requiring extensive employee discipline (e.g., correct completion and timely submission of input cards).

The above findings and comments do not apply to the vast majority of user departments and computer applications. They do apply to a significant degree, however, and those individuals engaged in management systems planning and development must be fully aware thereof.

EXHIBIT XXI

City and County of San Francisco

COST EFFECTIVENESS

- APPLICATION INEFFICIENCY
- LACK OF PROJECT CONTROL
- UNJUSTIFIED SYSTEMS
- EQUIPMENT UNDER-UTILIZATION
- INFORMATION DUPLICATION
- INEFFICIENT MANUAL INTERFACES
- EQUIPMENT ACQUISITION RISKS
- MULTIPLE SOFTWARE MONITORS
- PERSONNEL TURNOVER
- BUDGETING PROCESS
- FACILITIES DISPERSION

$2,000,000 – $4,000,000 ANNUALLY

6. EFFECTIVENESS OF THE CITY'S DATA PROCESSING EXPENDITURES ARE JUDGED TO BE 60% TO 80% OF THEIR POTENTIAL - WHICH EQUATES TO A POSSIBLE IMPROVEMENT IN COST-EFFECTIVENESS OF $2 MILLION TO $4 MILLION ANNUALLY

This report has presented a number of contributory and interrelated factors which jointly have a significant bearing on cost effectiveness. A majority of these are the result of inadequate planning and resultant inefficient use of resources. While more definitive estimates with regard to loss of effectiveness would result from a much more exhaustive and costly review, the results would not significantly impact the magnitude of these findings.

It is important that these findings be viewed from the proper perspective which may be characterized by the following points:

- The less than efficient use of EDP resources throughout business and industry is evidenced by the mass of books, business magazine articles, and periodicals devoted to the subject.
- The City and County has demonstrated its awareness at least to some degree and taken positive steps toward improving the cost effectiveness of its utilization of EDP resources.
- The two major EDP Service Centers are well managed and do provide the resources required. However, they cannot themselves dictate the effectiveness of their utilization by the City.

While the above considerations are important, they are not intended to obscure the fact that:

THE CITY AND COUNTY OF SAN FRANCISCO COULD INEFFECTIVELY UTILIZE AS MUCH AS $20,000,000 OF THE CONSERVATIVELY ESTIMATED $50,000,000 FOR DATA PROCESSING DURING THE NEXT FIVE YEARS.

If current growth trends continue without the management controls envisioned through the establishment of the EDP Priority Committee and the recommendations cited in this report, that loss may be conservative.

III. RECOMMENDATIONS

III. RECOMMENDATIONS

One of the keys to efficiency of future municipal governments lies with the sophisticated and intelligent application of information processing systems and their associated computers. As with any other business, the timely availability of information, to those whose actions depend on that information, is a primary ingredient to the degree of success of a municipal government in meeting the needs of the citizens it represents.

The City and County of San Francisco has reached the point where the cost/benefits of its use of EDP are justifiably in question. As this report indicates, the City has already taken some positive steps in the direction of improving its cost/effectiveness of EDP resource utilization. These steps coupled with a well defined action plan will establish the basis for significantly improving the utilization of EDP dollars.

Additionally, there are several general policy considerations that should be resolved and there are specific areas within data processing which offer opportunities for improvement.

We have structured our recommendations presented in this chapter into three sections relating to the above topics. They are:

- Management and Direction
- Policy
- Data Processing

EXHIBIT XXII

City and County of San Francisco

MANAGEMENT AND DIRECTION
RECOMMENDATIONS

PHILOSOPHY

SCOPE

OBJECTIVES & FUNCTIONS OF PRIORITY COMMITTEE

ROLE OF EDP

MANAGEMENT & FUNCTIONAL MECHANISMS

REVIEW OF OTHER MUNICIPAL SYSTEMS

REVIEW OF EXISTING APPLICATIONS

PROCEDURES

PROJECT APPROACH

AUDITS

1. THE MANAGEMENT AND DIRECTION OF DATA PROCESSING NEED TO BE ESTABLISHED THROUGH A WELL DEFINED PLAN OF ACTION

The recommendations in this section address the major areas calling for management attention. They are addressed to a large extent to the EDP Priority Committee. These recommendations should be considered in the development of an action plan that will establish the scope and framework of the committee's efforts over the next year. The Action Plan should be documented and presented to the offices of the Mayor and Board of Supervisors.

It should be recognized at the outset that the committee will require assistance from many levels within the City in these efforts. It may also elect to solicite outside assistance in the implementation of that plan, although no recommendation is made to do so in this report.

It must also be recognized that the magnitude of this effort is, as the factors it deals with, large. The committee's functions, from a simplistic point of view, is to manage a ten million dollar a year business enterprise.

(1) The City and County Should Establish a Philosophy and Direction for Data Processing

The philosophy and direction, when it exists, is currently at the user department or data processing level. The City as a whole offers no direction or guidelines in the selection, justification, or use of data processing resources.

The spectrum of philosophy for data processing is broad in municipal governments. At one end is the very conservative approach where minimum mechanization is permitted. This approach may exist for a variety of reasons from employment practices to ultra conservative management. At the other end of the spectrum is the leading edge or state-of-the-art approach where cost factors are not a key consideration. In some instances such cities may be operating under a research and development grant from a Federal agency.

A number of considerations are involved in the development of a philosophy. These include the following:

- Municipal Information System--Should the City attempt to integrate its systems into an MIS at this time?
- Growth--Should an annual growth limitation be placed on the EDP budgeted expenditures?
- Jurisdiction--Should or can the City control all EDP activities in and for the City and County?
- Evaluation of New Applications--Should new applications be accepted only if cost or operationally justified?
- Existing Application--What priority should be established on cleaning up antiquated existing systems versus new endeavors?

The City's direction in each of these and other pertinent areas should be established in order to provide a framework of guidance for the user departments as well as the EDP Priority Committee in the planning and implementation of electronic data processing.

(2) The Scope of Responsibility of the EDP Priority Committee Should Be Expanded to Include the Total Information System

The findings of this report have indicated a strong need for the interplay and proper integration between manual and automated systems. The Committee must be concerned with both aspects of the City's information system if significant improvements are to be made. This expanded role provides functions which parallel those of Management Information Systems or MIS Steering Committees in many large-scale users of data processing. It is recommended that the name of the Committee be changed to the MIS Priority (or Steering) Committee to reflect its full role.

While the detailed review of manual information systems was beyond the scope of this study, our findings indicate that the inefficiencies existing in these systems may be on the same order of magnitude as those existing in Electronic Data Processing.

(3) The EDP Priority Committee Should Set Forth in Detail Its Objectives and Functions

The purpose of this effort is to place in specific terms what the Committee is to accomplish and how it will be accomplished. Objectives to be considered should be in detail and may include:

- To develop and maintain a five-year EDP utilization plan. To monitor that plan and report progress against it to the Mayor and Board of Supervisors
- To annually present to the Mayor and Board of Supervisors a prioritized plan for the coming fiscal year, detailing the costs involved and the benefits to be received
- To insure the cost effective development and operation of the information system for the City and County
- To insure responsiveness to management and operational information requirements
- To provide an understanding to the City and County of the information resources available

The functions should specify the efforts of the Committee to insure the objectives are met. The scope of these functions should be defined to insure the Committee's resources are utilized in the most efficient manner. For example, the Committee itself should not be concerned in studying an equipment alternative with a cost differential of twenty dollars a month.

They should specify these functions to include the limitations involved. For example:

- The Committee will review each request for equipment purchase or upgrade exceeding $ X per year or requiring more than a two year commitment on the part of the City.

- The Committee will review all proposals for outside services exceeding $ X .

- The Committee will authorize and insure an annual financial and operational audit is conducted of all EDP activities under its jurisdiction. This audit will be conducted prior to the start of the fiscal year... and (should the Committee elect to use the services of an outside firm) at a cost not to exceed $ X .

(4) The Committee Should Define the Role of the EDP Centers

This recommendation is to clarify, for all parties concerned, the role of the EDP organization within the City. This definition will clearly define the responsibilities within EDP. These responsibilities should consider:

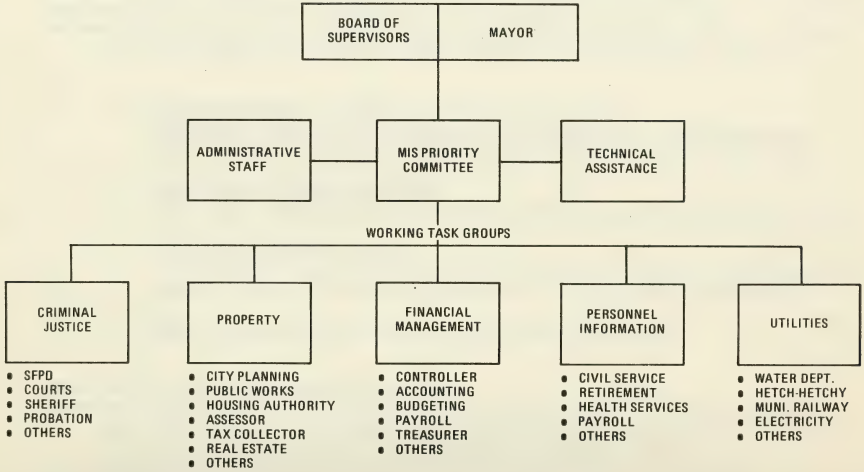
- EDP's role is primarily one of technical support and service.
- EDP will assist the users in the development of plans by providing technical representation. They will not chair the planning functions nor be responsible for the development of plans.
- EDP will be responsible for making all recommendations for new equipment or enhancements to the Committee.
- EDP will develop a detailed implementation plan based on the Master EDP Utilization Plan and present this plan to the Committee. They will report to the Committee on progress in relation to that plan.

The user departments should, in effect, contract for EDP services. The work to be done should be defined in reasonable detail, target dates established for task completion, and cost estimates generated. Monthly billing statements and reports should be provided by EDP, by detailed work element. Accountability should be commensurate with that of a professional service bureau.

EXHIBIT XXIII

City and County of San Francisco

MANAGEMENT AND FUNCTIONAL MECHANISMS



(5) The EDP Priority Committee Must Be Complimented with the Management and Functional Mechanisms Required to Carry Out Its Responsibilities

As previously mentioned, the efforts involved in the development of a Master EDP Utilization Plan are of a large magnitude. The Committee cannot hope to make a beginning in this direction without some other mechanisms to carry the bulk of the effort.

The exhibit opposite reflects an approach toward the establishment of these mechanisms. There are three basic types of mechanisms shown.

- Administrative Staff--The functions of the Committee, particularly during the initial efforts will require a significant amount of clerical and administrative assistance. While it is anticipated that the functions of this staff will take a full time work effort, the immediate needs can probably be met by part-time assistance. The functions of this staff would eventually include:

  - Scheduling meetings, establishing agendas and recording minutes
  - Receiving and logging status and progress reports
  - Preparing plans and reports to the Mayor and Board Supervisors
  - Preparing correspondence and related secretarial and clerical functions

- Technical Assistance--The Committee may elect to provide full or part time technical assistance in the following areas:

  - Computer systems and software to provide independent objective evaluation of EDP activities within the City.

  - Manual systems to review and provide guidance and evaluation in the development of manual information systems.

  - Financial to review and evaluate the cost aspects of planning and development of both manual and mechanized systems.

The Committee may also elect, from time to time, to augment these efforts through the use of independent consulting firms or other assistance to carry out its responsibilities.

Working Task Groups--In each major area of endeavor, the Committee should direct the establishment of working task groups to develop plans and evaluate efforts in specific areas. Such groups exist now in the areas of Criminal Justice and Utilities. These groups will have the following responsibilities:

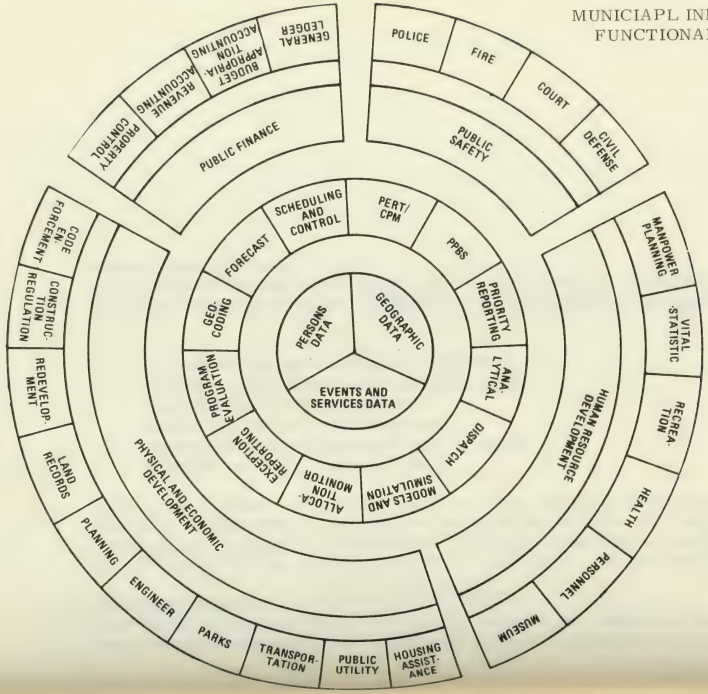
- Detailed review of current systems
- Establishment of information requirements
- Cost-justification of requirements
- Development of a detailed plan
- Presentation of plan to Priority Committee
- Monitoring the implementation of the plan

Data processing will provide a working technical representative to each task group. He will be a senior analyst and have the lead responsibility of implementing the system when approved.

EXHIBIT XXIV

City and County of San Francisco

MUNICIAPL INFORMATION SYSTEM
FUNCTIONAL STRUCTURE



(6) The Priority Committee Should Review Approaches Taken by Other Municipal Governments in the Implementation of Information Systems

A number of advanced municipal information systems are in existence. A review of these systems, their major applications, and their developmental problems, would add invaluable perspective to the Committee's efforts. Such reviews should be approached from a City Management rather than technical point of view. These systems include the Integrated Municipal Information System being developed for Wichita Falls, Texas under the auspices of the Urban Information Systems Inter-Agency Committee of the Department of Housing and Urban Development.

The exhibit opposite highlights such a systems' functional structure.

(7) The Priority Committee Should Conduct an In-Depth Review of Existing Applications and Information Systems Requirements

This should be accomplished with the assistance of EDP and the user departments. Its objectives will be to gain a thorough understanding of the current EDP applications, their strengths and weakness, those requiring immediate attention, or enhancement and possibly point out systems that may not be justified and could be eliminated by enhancements to other systems.

The Committee should also take action required to determine the extent of potential EDP applications in those City Departments not currently using data processing services.

(8) The Priority Committee Should Define the City-Wide Procedures to be Implemented for the Planning Use and Management of EDP Resources

These procedures are required to insure a uniform approach toward information systems planning and management. They should include:

- Systems (Departmental) Plan Development
- Project Plan Development
- Cost Justification
- EDP Implementation Plans
- Progress Reporting
- Requests for EDP Services or Resources

(9) The Committee Should Approach the Development of a Long-Range City-Wide Master Information Systems Plan from a Project Management, Planning, and Budgeting Standpoint

Integrated data base systems and municipal information systems (EDP utilization plan) must be developed as an integrated whole, not through the independent development of its parts. The Committee, through its working task groups will be responsible for project planning and management.

Project management is simply the self-discipline of establishing definitive project plans, periodically assessing progress against those plans, and taking appropriate corrective action. In the application of planning and control techniques, three elements of project management, each requiring extensive user participation, must be emphasized:

- Specification Development--The design documentation for a data processing system should consist of a hierarchy of specifications that describe the system throughout its life span. The major objectives of an overall system specification are:

  - Define expected performance of total system.
  - Provide a functional description of the system.
  - Identify all interfaces with other systems and processes.
  - Specifically and concisely describe the system.
  - Establish a baseline for controlling changes.
  - Define the end product(s).
  - Provide a guide for the detail design effort.

  More detailed documentation for subsystems is developed throughout the design phases, as the design proceeds to lower and lower levels of detail.

- Baseline Management--The various elements of design documentation provide system baselines or points against which change can be measured. Baseline

management acknowledges the dynamic nature of data processing systems and incorporates management techniques to control this dynamic action. This process involves:

- Baseline Identification, which is accomplished through the specifications.

- Change Control, which is a formal procedure for proposing, reviewing, approving, and implementing system changes.

- Change Accounting, which provides the administrative mechanics and record keeping.

- Quality Assurance--Involves performing of formal design reviews in which the user and designer assess project progress toward meeting expected system performance, as opposed to cost or schedules of the project to that point. Systems testing verifies that the system meets all specification requirements and documentation audits allow final verification that all changes have been incorporated in the system and documented.

These efforts should begin at the departmental level where comprehensive systems requirements and plans are developed. These plans must incorporate all the user Department's statistical and management information requirements and deal in depth with each subsystem comprising the overall integrated system. It must reflect the goals and objectives involved, changes in staffing, and facilities which are inherent therein, and all other related considerations. The plan should reflect an analysis of costs, skills, and experience required, time to complete, custom features required, and ability to implement in a modular manner.

Technical assistance should be obtained from Central EDP and outside agencies, as required, however, the primary responsibility for this level comprehensive system plan rests with the user department as an inherent management function. It is their integrated and long-range departmental management systems plan.

The working task groups should meet regularly to insure that the efforts on the departmental level are focused on objects at that level and at the project level as well. As work progresses, the task group will begin combining the individual departmental plans into the overall project plan for presentation to the Priority Committee. These plans will include:

- Project overview
- Information flow, current and planned
- Anticipated cost savings and operational benefits
- Hard dollar cost justification
- Planning schedule
- Project system priorities

The Committee will review and evaluate each project plan and combine these into a City-wide master plan. Within the basic guidelines of costs limitations, growth factors, equipment requirements, and cost benefits to be gained, the Committee will establish a prioritized schedule. The total costs will be defined along with resource requirements. The plan will then be submitted in the form of a recommendation to the Mayor and Board of Supervisors.

(10) The Committee Should Consider An Annual Audit of Information Systems Activities Within the City

The Committee should take necessary steps to insure that an independent and objective evaluation of information systems and data processing is performed at least on an annual basis. This will provide the Committee with an objective evaluation of current status and a measurement of progress.

EXHIBIT XXV

City and County of San Francisco

POLICY RECOMMENDATIONS

EQUIPMENT RESOURCES

REPORTING RELATIONSHIPS

CENTRALIZATION

OUTSIDE SERVICES

2. BASIC POLICIES AS TO THE USE OF DATA PROCESSING RESOURCES NEED TO BE DEVELOPED

A number of economies on a smaller scale can be realized through the establishment of basic policies. While some of these may exist in one form or another, they are not always followed. This section recommends a number of these for consideration.

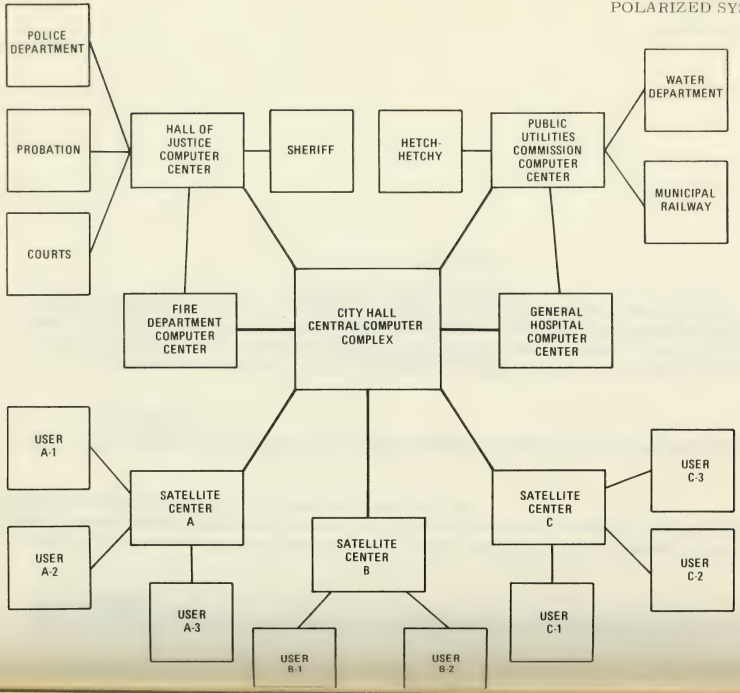
(1) The City Should Consider It's Total Equipment Resources In Planning for New Applications

Under the jurisdiction of City management, there are now two large centers and three smaller installations. While the City Hall Complex is near capacity, the PUC Center and, less importantly the smaller installations, do have capacity for additional applications. These resources should be viewed as a pool of systems available for new applications.

EXHIBIT XXVI

City and County of San Francisco

POLARIZED SYSTEMS



(2) The City Should Consider Realigning the Reporting Relationships of the City Hall Complex

Currently the City Hall Complex is under the control of the Controller and the PUC Center reports to the Commission. While the PUC Center's clientele is exclusively in the utilities area, the City Hall Complex serves a variety of city departments. It was originally set up to provide principally financial and accounting information but has grown far beyond that. Our findings do not indicate problems in the current reporting relationships, quite the contrary, but is felt the City Hall Center should report to an organization, such as the EDP Priority Committee, more aligned with the functions across the City.

(4) The City Should Continue to Utilize Outside Services for Application Development Where Economically Justified

As specifications are developed for new applications or major enhancements, the City should definitely consider issuing a request for proposal for outside assistance. There will be instances when an outside firm may be able to accomplish such development at lower costs than the City because of:

- More experience - e.g., software development
- Highly specialized skills - e.g., SAFER
- Proprietary packages - e.g., CABLE

EXHIBIT XXVII
City and County of San Francisco
EDP RECOMMENDATIONS

ACTION PLAN

RELOCATION

MANAGEMENT SELECTION

APPLICATION INVENTORY

ADMINISTRATIVE SYSTEMS

3. A NUMBER OF IMPROVEMENTS ARE JUSTIFIED IN THE EDP CENTERS

As the findings of this study have indicated, a number of improvements are currently underway in both Centers. The Directors of both are relatively new and have stepped up to their responsibilities.

(1) The EDP Centers Should Develop a Well-Defined Action Plan for Improving Their Own Internal Operations

Data centers often find themselves placing such improvements in low priority because of user service requirements. While the desire to offer the best service on an individual basis is good, it should not be allowed to overshadow the importance of improved operations and the overall benefits obtained by all users. A well-defined action plan for operations improvements should be established with specific schedules for each Center. This plan could incorporate the many projects that are now under as well as the recommendations contained herein where appropriate.

(2) The City Hall Central Complex Should Consider a Feasibility Study for Relocating Its Computer Equipment and Input/Output Control and Preparation to 240 Van Ness

The facilities offer a great deal more room for expansion and could provide for better centralization of the scattered facilities they now have. The three floors of the building could conceivably hold the computer systems, the input/output control and preparations, and the input preparation respectively.

At the same time, the space now occupied by these functions could be renovated for use by the programming staff now located at Van Ness. This would offer an opportunity to improve working conditions and could result in higher productivity and lower turnover.

(3) The Centers Should Seek to Improve the Depth and Breadth of Its Management and Technical Skills

While the importance of promotion from within is recognized, particularly in the City and County environment, data processing management should seek outside expertise in specialized areas, such as was done to accelerate the move toward an integrated criminal justice system. This would be particularly true for the implementation of a Citywide Municipal Information System.

(4) The Center Should Develop an Inventory of Current Applications

This inventory will serve a number of purposes but its primary utility will come from the base it will establish for planning. Each program should be inventoried by system and contain the following information:

- Input
  - Source
  - Content
  - Form
  - How received
- Output
  - Content
  - Distribution (including # copies)
  - Frequency
- General logic flow
- Processing requirements
  - Equipment
  - Peripheral devices
  - Run time (avg.)
  - Core requirements
- Frequency
- Files accessed

Most of this information can be summarized from existing program documentation. Summaries should be developed by system and by user.

(5) EDP Should Develop or Purchase Several Improved Administrative Systems

While some steps have been taken in this direction, more action is required and priority should be given to the following:

- The implementation of the PAC system
- An improved scheduling system
- An improved tape inventory system
- A mechanized system for computer down time analysis

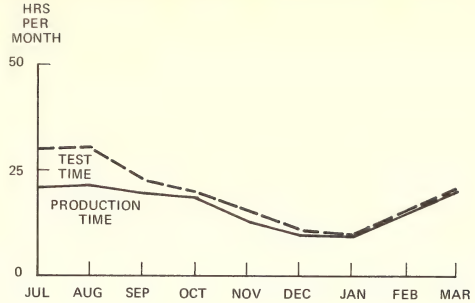
(6) The City Hall Center Should Review Its Total Approach Toward Software Development When the Base Is Established by the Master Plan

A number of alternative systems exist to the current monitors CABLE and FASTER. When long-range requirements have been established, these systems should be examined as well as the possibility of developing a tailored system in house. The approach should be defined and included as a part of the implementation plan.

Even though inefficiencies exist with the current systems, such a move should not be made until requirements have been defined.

APPENDIX A

INDIVIDUAL DEPARTMENT 370 UTILIZATION



370 MONTHLY USAGE
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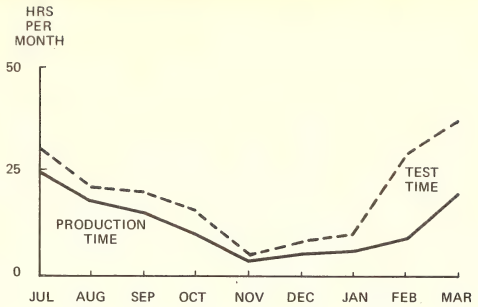

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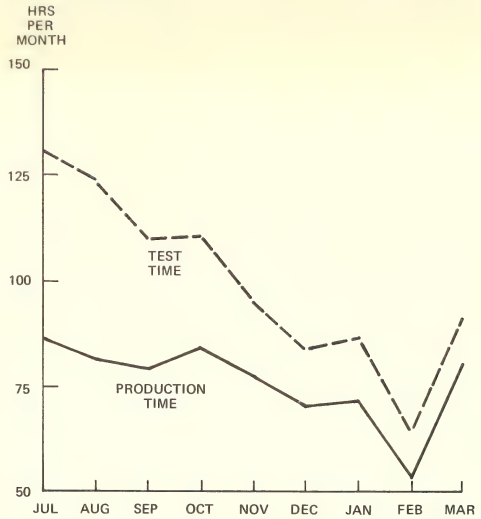

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DEPT. – CONTROLLER – 123

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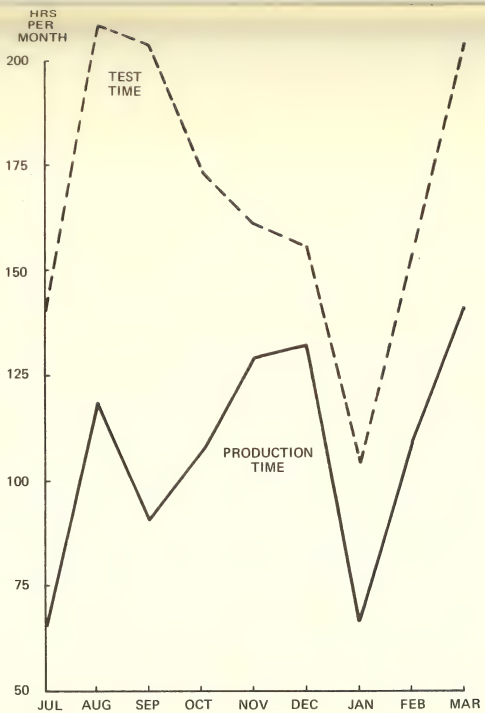

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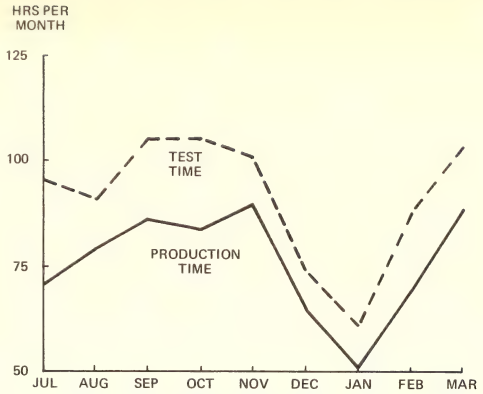
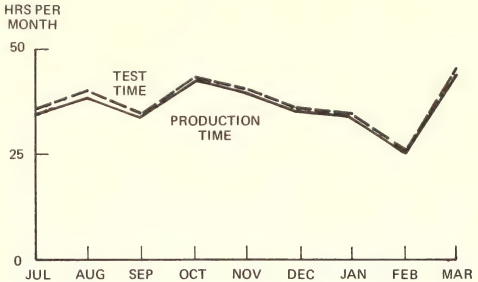
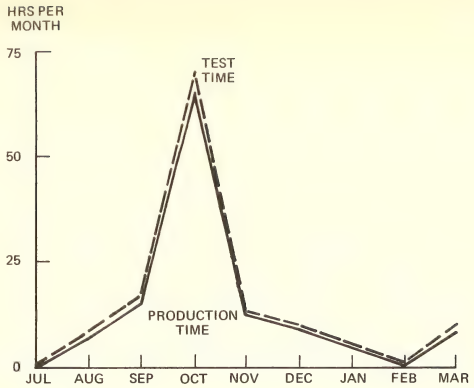


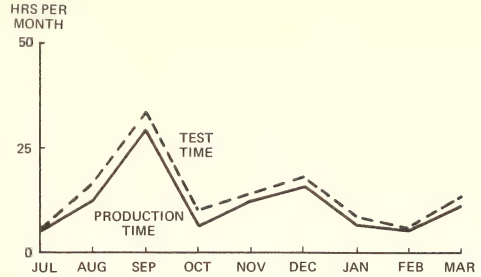
370 MONTHLY USAGE
DEPT. – DEPARTMENT OF SOCIAL SERVICES – 169



370 MONTHLY USAGE
DEPT. – SUPERIOR COURT – 179



370 MONTHLY USAGE
DEPT. – REGISTER OF VOTERS – 255



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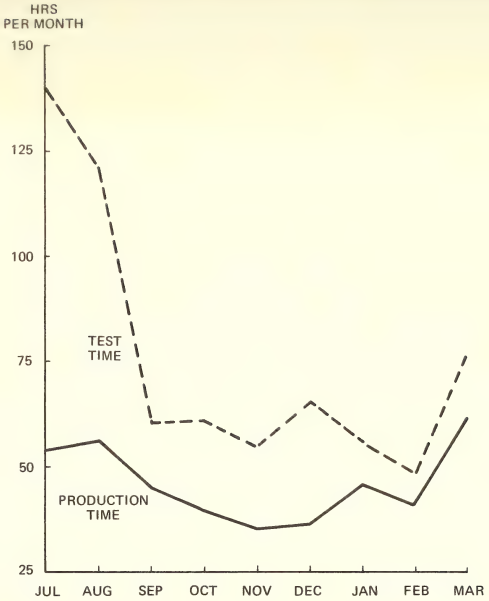
DEPT. – TAX COLLECTOR – 261



370 MONTHLY USAGE
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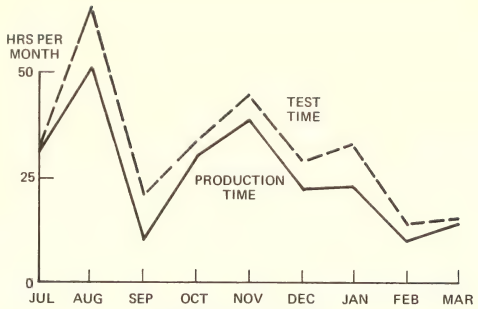
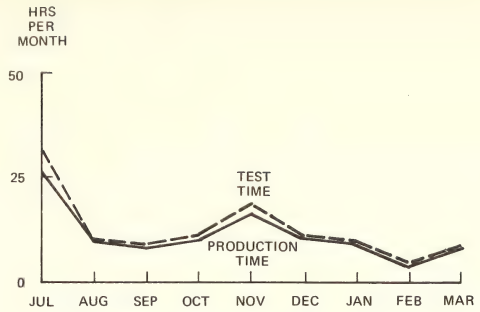


370 MONTHLY USAGE
DEPT. – RETIREMENT – 697

UNIVERSITY OF



370 MONTHLY USAGE
DEPT. – HEALTH SERVICE – 699

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APPENDIX B

CURRENT APPLICATIONS - CITY HALL COMPUTER COMPLEX

NOTE: These Descriptions Were Extracted From 1973-1974 Budget.

		Amount	Volume
A - 111 Adult Probation Sheet 2, Line 2			
	Family Support Information System (FRO)	$ 74,502	73,000
	Ongoing project to provide automated means of recording criminal and civil child support cases; accounting and controlling payment in regards to child support; provide routine information and action reports for use by investigators, administrators and auditors; provide aid to cashier's section in alleviating clerical burden.		
	Probation Criminal Statistics (FRS)	81,941	15,000
	Ongoing project based on legal requirements to report probation statistics and data on individuals to the State Bureau of Criminal Statistics. Objectives include recording and maintaining probation cases (other than Family Support), providing legally required reports, developing status reports and caseload information to help alleviate Probation Officer clerical workload, and providing management reports for internal department use.		
	Probation Records System (New)	60,700	15,000
	This is the first stage of the Adult Probation segment of the San Francisco Justice Information System: to assess, document and evaluate Adult Probation Department structure and information needs; to create teleprocessing capability accessing probation cases by a master indexing system; to produce demographic and statistical data for department operations.		
	Total required	$ 217,143	
B - 115 Assessor Sheet 2, Line 3			
	Marine Field Book System (ABA)	$ 3,287	5,400
	Ongoing project for maintenance of a Marine Field Book File which is used for the preparation of the Marine Field Books (boat registers) and Marine Personal Property Statements, both of which are used for assessment purposes. Registrations and changes are received from the Calif. Dept. of Motor Vehicles.		

	Amount	Volume
B - 115 Assessor continued		
Secured & Unsecured Personal Property Project (ADB)	$ 56,403	50,000
Ongoing project in conjunction with the Business Field Book Project generates and processes all Personal Property Statements used in the preparation of the Secured and Unsecured Assessment Rolls. This project incorporates the printing of the Unsecured Assessment Roll and Monthly Additions to the Unsecured Assessment Roll.		
Business Field Book Project (AFB)	51,891	55,000
Ongoing project to provide for the maintenance of the Field Book files used to create business field book audit sheets, registers, and business personal property statements. Personal property statements, filed by the businesses and audited by PP auditors then become an integral part of the Secured and Unsecured Assessment Rolls.		
Homeowners Exemption Project (AGA)	68,442	133,000
Ongoing project for the maintenance of qualified Homeowners File used in the preparation of Homeowners Claim Form, Homeowners Reminder Cards, Annual Register of Homeowners File, Homeowners Exemption File for S.B.E., and many other control registers.		
Secured Roll Project (AIA)	174,806	335,000
Ongoing project for the maintenance of the Secured Property file, the Owner file and other related files necessary for the preparation of the Preliminary Secured Assessment Roll, the Secured Alpha Index, the Real Estate Assessee Register, and many other control reports and documents required by the Assessor and the S.B.E.		
Total required from Assessor	$ 354,829	
C - 119 City Planning Sheet 2, Line 4		
Housing Inventory Changes (CPA)	$ 18,000	140,000
For leasing of a calculator to provide immediate computation or changes in San Francisco Housing Inventory information on new construction, demolition and net change in the City's housing.		

		Amount	Volume
C - 119	City Planning continued		
	Census Data (CPC)	$ 4,991	714,674
	Ongoing project processing Census Tapes for various departmental information purposes.		
	Total required from City Planning	$ 22,991	
D - 121	Civil Service Sheet 2, Line 5		
	Examinations (SDA)	$ 4,153	3,000
	Ongoing project to provide "Notices to Appear" and various Registers concerning examination applicants. Analyzes examination answer-sheets to provide statistical analysis of scores (including Mean, Medium, Standard Deviation, etc.), provides tabular data by group analysis by frequency and cumulative frequency distributions and calculation by percentiles.		
	Requisition Processor (SAM)	34,976	12,000
	This project will continue to develop computer assistance to the requisition and certification processes. The eventual implementation of a position control system in connection with payroll processing will be based on this area.		
	Civil Service Teleprocessing (STP-STR)	78,401	28,000
	STP - Ongoing - Provides terminal access and remote data maintenance capabilities over certification data, personnel data (including leave balances). STR - Under development - Shall provide development of a computer requisition file. Teleprocessing programs will include ability to associate employees with appropriate requisitions.		
	Sick and Annual Leave Processing (SAH)	92,433	28,000
	Ongoing project provides computer support of sick and annual leave accounting procedures. This project includes preparation and control of leave data reported on timerolls, computer processing of this data, crediting leave balances and production of several pertinent reports.		

	Amount	Volume
D - 121 Civil Service continued		
Salary Ordinance (SAA)	$ 12,278	28,000
Ongoing project by which the Annual Salary Ordinance is updated to reflect changes which result from the Salary Survey, from Union Contracts, from Charter Amendments, etc., and is printed in either its working copy or publication format. Part of this project are miscellaneous reports, such as Level Charts by Salary Classification, or Salary Survey.		
Salary Standardization (SAL)	5,325	1,600
Ongoing project that provides Civil Service with basic information necessary to estimate the impact of salary increments on the total budget for personnel. These reports compute the costs of various salary increments and show separate totals for funded and non-funded employees and requested new positions. Salary standardization statistics related to salary increase factor and computation - 'Budget Factor' and Update Employments' are also provided.		
Total required from Civil Service	$ 227,566	
E - 123 Controller Sheet 2, Line 6		
Accounts and Reports (CTA)	$ 13,317	155,000
Ongoing project provides for the maintenance of Real Estate Tax File. It calculates the taxes, creates the extended roll, makes changes to the Real Estate Tax File.		
Unsecured Delinquent Roll (CTB)	9,331	8,000
Ongoing project provides for the creation of the Unsecured Delinquent Roll file.		
Budget Statistics - Nine year Expenditure and Revenue	79,041	25,000
Ongoing project in addition to the traditional Batch processing, the Controller's Budget System also utilizes teleprocessing techniques to allow the immediate retrieval or update of both the current and forthcoming fiscal year budgets. Maintenance and modification to this system and the Appropriation Ordinance working copy, a sub-system,		

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	Amount	Volume
will continue throughout the coming year. The Nine-Year Expenditures and Nine-Year Revenues reports are part of this system.		
Appropriation Ledger Accounting (CFR)	$ 72,417	240,000
Ongoing project. The Appropriation Ledger Accounting System is an on-line retrieval and update of the Appropriation Ledger files via the visual display terminals; current, accurate information is therefore available to the departments regarding the status of their accounts. Other functions of this system include automatic quarterly allotments, production of the new fiscal year apprn. cards, and the simultaneous operations of the old and new fiscal year appropriations.		
Appropriation Ledger-Accounting Statistics (CFC)	37,327	100,000
Ongoing project to prepare a monthly Budget Statistics Register Statement which shows the total expenditures charged to each Appropriation Account Number, and the total for each object of expenditure under each Appropriation Account Number. The totals by Object of Expenditures under each Appropriation Account Number are now used for reference purposes, particularly when requests for additional allotments are received from departments. Copies are prepared for departments concerned. The present system is interfaced with the on-line Appropriation Ledger Accounting and Budget Systems.		
General Office - Various (CHA)	64,368	175,000
Ongoing project provides for the handling of Purchase Orders, Work Orders, Encumbrances, Supply Warrants and various other statistical reports. Much of the new fiscal year's work will be concerned with the conversion of tabulating systems to take advantage of the speed and accuracy of computer based systems.		
Federal & State Information Returns (CIR)	25,328	35,000
Centralization of the generation and submission of data for the U.S. Information Tax Return (Form 1099) for Medical, Interest, and Miscellaneous, and also preparation of data for the submission of Form 1096 to Federal Government and Form 596 to State of California. All City departments' information for Tax returns are converted into a form which can be used to prepare the 1099 Report to individuals. Modifications of programs to conform with annual changes of procedures and request by Internal Revenue Services.		

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	Amount	Volume
E - 123 Controller continued		
Outstanding Warrants Reconciliation (COW)	$ 72,697	2,400,000
The Outstanding Warrants System consists of reconciliation of Daily Cashed Warrants to the Treasurer's Daily Cashed Warrants Report on public assistance payrolls, employee's payrolls, and various other payments and reconciliation of cashed and cancelled warrants against their disbursement authorizations. Continued efforts are being made toward replacing other old manual system of balancing toward data processing.		
Revenue System (CRS)	49,748	75,000
The Controller's Revenue System provides daily updating of revenue master file in process of daily, monthly, quarterly, semi-annually and annually reports for budget estimates, budget modeifications, cash receipts, revenue adjustments sales tax and other related information. This system will utilize teleprocessing techniques to allow the immediate retrieval and to incorporate with other finance data base information system. At any time it will be able to give us up-to-date information the estimated revenue as compared with actual revenues to show what further adjustments should be made.		
Warrant Register (CWR)	18,357	100,000
Ongoing operational project provides for the utilization of an optical scanner for the input of the Warrant Register Transactions. It is expected that this system will be modified in the coming year to take advantage of the Warrant Transaction Information available as part of the Appropriation Ledger Accounting System.		
Employee Payroll (CAA)	448,205	725,000
Ongoing operational project prepares Timerolls, Payrolls, and Pay Warrants and the accumulation and distribution of Accounting Information to the appropriate divisions of the Controller and other departments who require this information for Accounting procedures.		

	Amount	Volume
E - 123 Controller continued		
Miscellaneous Warrants (CMW)	$ 8,935	12,000
Ongoing project provies the preparation of Miscellaneous warrants.		
Voluntary Deductions (CAC)	59,344	636,000
Ongoing project provides for the accumulation of Voluntary Deduction thru Payroll deduction. The monies deducted for Vol. Ded's are deducted by-weekly and monthly. A report of transmittal and warrant due each organization monthly is produced and forwarded to each appropriate organization. The average total amount forwarded to the organization per month is 1½ million dollars.		
Earnings & Tax (CET)	39,292	38,000
Ongoing project provides for the generation and submission of data for the U.S. Information Tax Return (Form 1099) and the California Information Tax Return (Form 599). A companion project also prepares the reports for the W-2P's.		
Employee Organization Statistical Report (CAO)	2,520	100
This project produces a listing of employees contained on the Voluntary Deduction Master File. The report is produced in organization sequence by Civil Service Class within department to arrive at an organization count for the purpose of representation in collective bargaining by the Chief Administrator's Office.		
Election Officials Payroll Warrants (CAD)	945	8,000
Pay Warrants are processed and mailed to Election officials and for garage rental for the polling places necessary to conduct an Election.		
Social Security Deductions (CAB)	26,949	38,000
This project is responsible for the accumulation, generation and submission of social security and F.I.C.A. quarterly deductions to the State Retirement System who in turn forwards both deductions and matching funds to the U.S. Social Security Administration.		

	Amount	Volume
123 - Controller continued		
Payroll System Version III (CPR)	$ 123,756	725,000
Ongoing, underdevelopment project provides for a third generation conversion of the CAA project. Preparation of timerolls, payrolls, andpay warrants and the accumulation and distribution of accounting information to the appropriate divisions of the Controller and other departments that require this information for accounting purposes.		
Payroll Teleprocessing (CTP)	54,472	31,000
Ongoing, under development project provides for the creation of a third generation teleprocessing on-line system which will provide for direct entry thru terminals to the payroll master file. All additions, deletions and changes will be accomplished with a minimum of manual intervention thus reducing the error factor and increasing overall speed and efficiency of the file maintenance operation.		
Total required from Controller	$1,206,349	
F - 141 District Attorney Sheet 2, Line 7		
Basic Court System	$ 8,889	52,000
Ongoing project provides 2 terminals for the District Attorney to access the Basic Courts System. Systems Development and programming cost are provided in the Superior Courts Budget.		
G - 145 Fire Department Sheet 2, Line 8		
Fire Statistics (FSS)	$ 15,583	1,000
New project provides for the fire department necessary statistical information on items as causes of fire, building types in which fires occurred, geographic location, number of fatalities, including sex and age groups, and other pertinent statistics used for required Monthly and Annual reporting and for Fire Prevention Planning.		

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	Amount	Volume
G - 145 Fire Department continued		
False Alarm Reports (FFA)	$ 1,205	1,500
Ongoing project provides the Department the following reports as requested. Monthly -(1) detail listing by firebox and time of each false alarm recorded (2) Monthly total of false alarm by district (3) Monthly total of hourly occurrence.		
Hydrant Statistics (FIR)	3,722	9,206
Ongoing project maintains two files, one for high pressure fire hydrant, and one for low pressure fire hydrants. The records of these files contain the location of each hydrant, information about the hydrant, and the last date on which the hydrant was serviced. The file is updated and listed monthly. The principle use is to control hydrant servicing.		
Building Inspection (FBI)	7,193	24,387
New project will record data provided by fire inspectors regarding the district, type of building, violations discovered, and corrections made. The District printout will aid the inspector by insuring that certain occupancies requiring annual fire clearance will be inspected.		
Fire Command & Control (FCC)	3,719	3,000
New project will provide funds for consumable items for command and control system funded through the November 1971 bond issue. The bond issue only provides for development funds and does not provide for on-going operational costs.		
Standpipe Statistics (FIS)	750	10,578
Ongoing project utilizes the standpipe service records and produces a quarterly printout which assures the department that all standpipes are inspected and serviced in their proper sequence.		
Total required from Fire Department	$ 32,172	

		Amount	Volume
H - 147	Human Rights Sheet 2, Line 9		
	Statistics (OAA)	$ 7,168	28,000
	Ongoing project provides statistical reports of racial and ethnic employment patterns in City departments.		
	Total required from Human Rights	$ 7,168	
I - 155	Municipal Court Sheet 2, Line 10		
	Traffic Citations System (MCT)	$453,801	1,332,000
	Ongoing operational project provides for on-line processing of Traffic Violations issued for moving and parking citations.		
	Municipal Court Jurors (MCB)	1,182	12,000
	Ongoing project provides listing of prospective trial jurors which are extracted using the voter registration file.		
	Drunk File Index (MCC)	237	24,000
	Operational project provides record of all persons arrested for being drunk. Data taken from Daily Court Calendars.		
	Total required from Municipal Court	$455,220	
J - 161	Police Dept. Sheet 2, Line 11		
	Statistics (POL)	$148,941	204,000
	Ongoing project provides keypunched information from the Police reports and this information is processed and the necessary reports for State, FBI, and Police departments are produced. Information is also used for other projects such as POM to support police information requirements.		
	Stat-Field Support/PIN Warrants (POM/LAW)	230,605	
	Ongoing project which utilizes the information collected by the Statistical System. Many varied reports are generated by these programs including specific offenses by police district/plot and time of occurrence. This project supports many special one time reports for information by the Police Department.		

		Amount	Volume
J - 161	Police Dept. continued		
	Indexing (POX)	$ 57,985	132,000
	Ongoing project provides the names of persons involved in a police incident or an accident typed on OCR paper in the record room at the Hall of Justice. Daily, weekly, quarterly and annual alphabetic indexes are printed by the computer.		
	CABLE City-In-Kind	$ 983,416	600,000
	Ongoing, under development, operational project to provide funds for Phase III of the CABLE project. Phase I and II have been completed. They provide on-line access to law enforcement data bases at the Federal, State, Regional and local levels and give rapid responses to person, vehicle and article inquiries by field officers. Phase III will provide for extension of the system to provide a personnel subsystem and further develop the incident and manpower allocation systems.		
	Records MGT (PRM)	$ 50,000	132,000
	New project to provide microfilm storage, display and control devices necessary to support CABLE Phase III development.		
	Command & Control (PCC)	$ 99,800	360,000
	New project to provide terminal equipment to operate command and control system funded by LEAA Discretionary Grant Funds. Will help meet requirements for matching funds.		
	Total required from Police Dept.	$1,570,757	
K - 165	Public Defender Sheet 2, Line 12		
	Basic Court System	$ 4,742	20,000
	New and ongoing project to provide Public Defender's office with terminal to access Superior Court Basic Court System.		
	Total required from Public Defender	$ 4,742	

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Social Services Sheet 2, Line 13

	Amount	Volume
Aid Payrolls (WAD-WPD)	$ 498,964	2,200,000
Ongoing project provides daily, semi-monthly and monthly payrolls for categorical aids (AFDC, ATD, ATB, OAS and BHI). Programs also produce contra roll and microfiche records of payments for reference.		
Medical Eligibility (WAE-WPE)	70,016	2,280,000
Ongoing project maintains medical eligibility Master (Persons) File and provides data to the State for medi-cal Accounting and ID cards issuance. Listings of cases provided to the department for reference.		
Food Stamp System (WAF)	67,065	1,350,000
Ongoing and under development project produces monthly and supplemental authorizations to purchase; produce rolls, handles reconciliation, maintains Food Stamp data on the case Master File (which is thus available through teleprocessing terminals) and produces auxiliary listing and reports as needed. The Food Stamp program brings over one million dollars into the San Francisco economy each month in the bonus value of stamp.		
General Assistance (WAM-WPM)	136,587	1,180,000
Ongoing project, also under development, provides direct cash and rent, TP File, Statistical Files and Vendor Payments and various reports, summary, Vendor Payment and Statistics.		
Statistics (WAH-WPH)	38,084	496,000
Ongoing and under development project provides data necessary for numerous county and State required reports.		
Miscellaneous Administration (WAI-WPI)	38,689	496,000
Ongoing and under development project includes a large variety of report and special-purpose programs. They may be run on an ongoing production basis, on demand, one time only, or as needed. This is the most volatile group of programs; though frequently required on very short notice they may become obsolete just as quickly.		

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		Amount	Volume
L - 169	Social Services continued		
	Teleprocessing Files (WAT)	$ 269,057	496,000
	Ongoing project provides seven inquiries currently supported by the teleprocessing programs. These enable employees of the Social Services Department to retrieve information on the basis of name, case number, or address.		
	Warrant Registers & Reconciliation (WEA)	12,754	862,000
	Ongoing project provides weekly listing of warrants cashed.		
	Total required from Social Services	$ 1,131,216	
M - 173	Sheriff Sheet 2, Line 15		
	Jail Information System (SOJ)	$ 40,375	1,000
	Provides the department an automated means of keeping track of inmates in the four jails andprovides a daily log of: inmates by type, inmates by jail, inmates to be released. Provides immediate information concerning the status of inmate population. Also provides department access to the CABLE system and Court Calendars.		
	Total required from Sheriff	$ 40,375	
N - 179	Superior Court Sheet 2, Line 15		
	Juror Selection (SUP)	$ 1,455	
	Ongoing project provides the Superior Court with automated means of selecting prospective juror so as to produce Juror panels, Juror List and other necessary reports associated with July selection.		
	Basic Court System (SIR)	94,080	
	Ongoing, operational, and under development project provides the department an automated means of simultaneously handling the basic record keeping functions of the Superior Court in regards to case records, name indexes and printing daily court calendars; provides method for immediate updating of information for cases and immediate response to inquiry in reference to case and/or personnel.		

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	Amount	Volume
N - 179 Superior Court continued		
Justice Information System (CJI)	$ 10,000	
Cash matching funds for the integrated justice information system grant request which will provide $134,152 in federal funds. In-kind funds will come from each department in the form of personnel support. System will provide for an integrated information system encompassing all criminal justice departments and provide for training each department in the use of computer systems.		
Total required from Superior Court	$ 105,535	
O - 183 Treasurer Sheet 2, Line 16		
Equipment Rental	$ 5,846	
Ongoing project for rental and maintenance of Accounting Machines and peripheral equipment.		
Total required from Treasurer	$ 5,846	
P - 185 Juvenile Court Sheet 2, Line 17		
S.F. Juvenile Justice Information (JJS)	135,982	14,000
A grant has been made to modernize the record keeping and information systems of the Juvenile Court to improve staff operations and services to clients. The second year of the three year project will provide for detailed juvenile operations, support for probation and other law enforcement staff, development of basic data for community agencies planning prevention and diversion programs, specification of a juvenile profile and identification system, implementation of a dependent support collection system and preparation of a requirements model for a juvenile microfilm records retrieval system.		
Total required from Juvenile Court	$ 135,982	

	Amount	Volume
Q - 225 County Clerk Sheet 2, Line 18		
Basic Court System	$ 12,000	52,000
Ongoing and new project to provide the department with three terminals to process Superior Court records.		
Total required from County Clerk	$ 12,000	
R - 251 Recorder Sheet 2, Line 19		
Index System (RIS)	$ 26,244	90,000
Ongoing project to provide the Recorder automated means of outputing current indexes of Grantors and Grantees, monthly statistics by document type, daily numerical listing and fee sheets.		
Total required from Recorder	$ 26,244	
S - 255 Registrar Sheet 2, Line 20		
Registration (VAA)	$ 86,785	425,000
Continued maintenance for two elections the current files of registered voters, districts, precincts and polling places and development of system further in order to better meet the deadline imposed by the State Election Code. Thru the use of optical character recognition equipment, newly registered voters are added and updated thru the system. Prepare voluminous reports and statistical analysis for the Registrar, Party, State and County Committees, and the Secretary of State. Prepare mailing inserts for sample ballots. The on-line retrieval system will be expanded to incorporate update, scan for an individual registered voter by affidavit number, name, or social security number, and voters registration totals by type.		
Vote Count (VOC)	$ 58,345	350,000
For 1973-74, a two election year: Tabulation of votes for the semi-official tally and recanvassing of votes for official tally. Releases of the progressive count to the Press and Candidates at 10 minute intervals, ability to isolate counts per candidate by District and Precinct, and the ability to view statistic arrays on terminals by Press and Candidates.		

S.E. PUBLIC LIBRARY

	Amount	Volume
S - 255 Registrar continued		
The Vote Count System must also accommodate the effect which any changes in the State Election Code may have. Preparation of the Official Statement of Votes.		
Total required from Registrar	$145,130	
T - 261 Tax Collector - Gen'l Sheet 2, Line 21		
Licenses (TLA)	$ 53,192	280,000
This system is maintained on tabulating cards, all the miscellaneous licenses; like apartment house, restaurants, pinball operators, juke box operators, hotel licenses. A new system study is proposed in this budget to consolidate all the various licenses, tax forms and tax systems into one integrated system for better efficiency and economy.		
Secured Real Estate (TDA)	$149,095	310,000
Ongoing project provides for the maintenance of the Real Estate Tax Collection System. It creates the master file, tax bills, audit and posting of payments, and reports of outstanding balances, also shows on teleprocessing up-to-date paid accounts. A microfiche system for the Secured Roll is proposed for the coming year.		
Business/Payroll Tax (TAB)	$ 78,960	70,000
Ongoing project provides for the maintenance of the Business/Payroll Tax System. It creates new accounts, audit and post payment, show all account with up-to-date postings on teleprocessing terminals.		
Parking Tax (TPA)	$ 12,395	4,000
Ongoing project provides for the maintenance of the Parking Tax Collection System. It creates new accounts, quarterly statement, posting of payments, delinquent notices.		

	Amount	Volume
T - 261 Tax Collector Gen'l continued		
Unsecured Personal Property (TBA)	$ 16,435	60,000
Ongoing project provides for the maintenance of the Unsecured Personal Property Tax. It calculates the taxes, creates the Unsecured Roll and prints the tax bills.		
Tax Redemption Bureau (CTC)	11,843	10,000
This project maintains the Tax Redemption Bureau System. It creates a sold or deeded to the State each July and redemption from the State of delinquent tax payments. This is a preliminary step to preparing the Secured Tax Roll. Also listings for Sold to State, Redeemed from State and Duplicate Payments.		
Total required from Tax Collector Gen'l	$ 322,190	
U - 263 Tax Collector - Hotel Tax Sheet 2, Line 22		
Hotel Tax (THA)	$ 8,371	12,000
Ongoing project maintains the Hotel Transient Tax which is on tabulating cards and collection is quarterly.		
Total required from Tax Collector-Hotel Tax	$ 8,371	
V - 311 Purchasing - Gen. Sheet 2, Line 23		
Statistics (PUR)	$ 8,249	494,000
There are 16 reports prepared for the Purchaser on a daily, weekly, monthly or annual basis depending on type of report produced.		
Total required from Purchasing	$ 8,249	
W - 411 Public Works - Accts. Sheet 2, Line 24		
Accounts (PAA)	$ 6,154	100,000
Ongoing project provides accounting for stores, charges to work orders, encumbrances, liquidations and stock status reports for city departments and the SFUSD. Preparation of residence and accident reports		

	Amount	Volume
W - 411 Public Works - continued		
Index to DPW Keypunch (PAB)	$ 26,378	100,000
Ongoing project provides keypunch input to projects PAA and PWA.		
Telephone Billing (PAC)	$ 6,380	40,000
Ongoing project provides automated telephone billing and control on telephone usage.		
Labor Distribution (PWA)	31,088	10,000
Ongoing project provides daily time cards for labor distributions.		
Total required from Public Works-Accts	$ 70,000	
X - 415 Public Works - Bldg Insp. Sheet 2, Line 25		
Ongoing project performs engineering calculations from on site teleprocessing terminals (TYMSHARE & UCS) connected to remote computers.	$ 7,000	
Total required from Public Works-B.Insp.	$ 7,000	
Z - 421 Public Works - Engrg. Sheet 3, Line 2		
Ongoing project performs engineering calculations from on site teleprocessing terminals connected to remote computers.	$ 20,000	
Total required from Public Works-Engr.	$ 20,000	

	Amount	Volume
AA - 511 Public Health - Acctg., Sheet 3, Line 4		
Medical Care (MAA)	$ 29,342	360,000
Ongoing project provides payment to persons who receive Crippled Childrens Assistance and monthly purchase order, Medi-Cal and Health Statistics for the Department of Public Health.		
Accounting SFGH (MAC)	115,270	1,605,000
Ongoing project maintains master files and tables and provides statistical accounting reports on services rendered to patients at San Francisco General Hospital. This information is used by the Accounting Dept. to justify Medi-Cal, the Medicare claims, and other purposes. Additional reports are also provided for the X-ray and Lab departments giving them statistical information on what procedures and/or tests they have done. This project also processes Monthly Stores, Central Nursing Supply and Pharmacy requisitions to produce cost reports. It also creates a physicians pay report yearly from separate input.		
Admissions (MAD)	195,382	310,000
Ongoing project maintains and updates a Real Time Admission System which includes patient identification, assignment of hospital numbers to new patients, and on-line type of new patient index cards for the Hospital Manual Back-up System for San Francisco General Hospital. Included is a batch system which provides for file maintenance and backup summary activity reports are produced.		
Medical Records (MAE)	37,299	2,160,000
Ongoing project provides day-to-day reporting of Patient activity by ward and periodic reports of bed utilization and patient flow through the hospital by ward and to provide a basis for statisitical summaries for accounting purposes.		
CMHS Administration (MAN)	4,320	
Provides rental of keypunch, sorter, and reproducer.		

	Amount	Volume
AA - 511 Public Health - Acctg. continued		
Billing (MAF)	$ 231,111	3,650,000
Ongoing project provides San Francisco General Hospital with an automated Inpatient and Outpatient Itemized Billing. The system will provide all the necessary Medicare and Medi-Cal Claims Forms.		
Automated Clinical Lab.(MAG)	68,057	2,000,000
Ongoing, under development project consists of a Clinical Laboratory Information System using digital computer and CRT terminals in a real time environment. The system serves the Chemistry, Hematology, and Microbiology sections of the SFGH Clinical Laboratory and will enable the Laboratory to provide improved patient care by reducing clerical errors, improving internal quality control, speeding up test result reporting, and by providing cumulative patient summary reports. The cumulative summaries are organized by patient and will show all test results for a given patient stay.		
Laguna Honda (MAH)	6,503	30,000
Ongoing project provides for cost of preparing input data and listing of work performed for Laguna Honda. They will be able to identify the patients and work performed within their cost centers.		
Environmental Health Inspection (MAK)	17,971	192,000
Ongoing project maintains master file of work done by Health Inspectors, and tables of codes used in the file. From these files and tables the system provides ten reports on the inspections, complaint investigations and other services rendered by the Bureau of Environmental Health. (Each report available to the Bureau for any time period and with breakdowns by Health Center and by Inspector.		
Emergency Hospital Patient Index (MEA)	7,968	150,000
Ongoing project maintains the Emergency Hospital monthly alphabetical listing of patients serviced for That month.		

	Amount	Volume
AA - 511 Public Health - Acctg. continued		
Birth Index (HEB)	$ 22,885	80,000
Ongoing project maintains cumulative files of S.F. Births up to 5 years. Provides monthly, annual and cumulative birth statistics. Since being revised to run on the computer, it has provided reports in the required format in time for State and Federal deadlines, cutting about 30 days from the time previously required. Eliminated many clerical corrections, editing and reformattingformerly required.		
Death Index (HED)	14,957	1,300
Ongoing, under development project maintains Death Records up to 5 years and puts out 60 monthly, annual and cumulative reports. During coming year will be updated to cut time, costs, and clerical work as project HEB (Births) has done. This will enable Health Dept to meet State and Federal deadlines and give prompt, current information to the several agencies which use Death statistics in planning and health research.		
Total required from Public Health-Acctg	$751,065	
AC - 631 Library Sheet 3, Line 8		
Periodical System (LIA)	$ 35,903	52,000
This system provides daily, monthly and semi-annual reports and catalogs of all periodicals. A claims module will be added to the system to expedite claims for undelivered periodicals. Cost for contract printing of title catalogs have been included in this budget which formerly was included in the Library Budget.		
Peninsula Library System (LID)	1,529	12,000
To provide a combined title catalog including Peninsula holdings per contract with Peninsula Library system. Revenue of $1200 per year is received for this. Catalogs are printed on a semi annual basis.		

	Amount	Volume
AC - 631 Library continued		
Book Ordering System (LIF)	$ 24,687	130,000
New project to automate the accounting and record keeping processes in the book order department. This will alleviate redundancy in typing, allow better control of funds, monitor vendor performance and free staff to keep up with materials flow.		
Book Catalog System (LIG)	46,744	200,000
Automated cataloging system will eliminate redundancy of typing, allow better control of funds and orders and will reduce backlog. This system will maintain and produce book catalogs for 27 branch libraries thereby reducing manual filing and maintenance. Provides book location information not now available but highly desirable.		
Total required from Library	$108,863	
AD - 697 Employees Retirement Sheet 3, Line 30		
Retired Allowances (IRT)	$ 45,604	8,000
Ongoing project processes and produces monthly retired allowance warrants and payrolls in payment to retired members and beneficiaries of the Retirement System. Accounting, historical and statistical information and reports are also maintained and processed as required and in accordance with the administrative code and charter.		
Excess Interest Distribution (IRD)	3,483	6,500
Ongoing project provides for the processing for the Distribution of Excess Interest payable to Retired Members and Beneficiaries of the Retirement System as requested and in accordance with the Retirement Board Resolution.		
Investment Accounting (REA)	1,999	4,000
Ongoing project provides various reports of interest, maturity and other investment data of the bonds held by the Retirement System processed on a monthly and semi-annual Schedule. The reports are processed from an IBM card file that is maintained from data submitted by the Retirement System.		

	Amount	Volume
AD - 697 Employees Retirement continued		
Miscellaneous Accounting (REB)	$ 2,500	
Ongoing project that processes Reports of Contributing Members on Military Leave and Updates and Adjusts the Contribution Rates of Retirement Members.		
Excess Interest Distribution (RED)	2,935	22,954
Ongoing project provides eligibility lists, exception lists, payment rolls, warrants and other reports to process the Active Employee's Excess Interest Distribution in accordance with the Retirement Board resolution.		
Compensation Rolls (REM)	17,997	25,000
Ongoing project processes the medical compensation (Doctors, Hospitals and other medical services) statements to produce a weekly medical claims compensation payment roll and payment warrants. The detail data of the payments is maintained for historical and statistical purposes.		
Teleprocessing (REP)	43,581	27,000
New project will provide the Retirement System with the initial direct access and tele-processing capabilities to process active employees contribution data, employees membership and retired allowance data. Basic retrieval and update ability in the Retired Allowance area will be additionally developed.		
Contribution Accounting (RET)	105,157	1,250,000
Ongoing project provides automated employee membership accounting procedures for the Retirement System. The project includes the gathering and processing of payroll records and data, the processing of statistical, historical and informational reports and transactions as required and in accordance with the administrative code and charter.		

	Amount	Volume
AD - 697 Employees Retirement continued		
Microfiche (REZ)	$ 35,060	100,000
New project will provide the Retirement System with Microfiche applications of the Employees Retirement Ledger Accounts and the Employees Retirement Transaction Records. These applications will save needed filing and storage space in the Retirement System and will substantially reduce the computer usage time for these applications.		
Total required from Emp. Retirement	$ 258,316	
AE - 699 Health Service Sheet 3, Line 11		
Claims (HAC)	$ 41,399	56,000
Ongoing project processes Health Service System Plan I Claims Payments to Plan I Members and Dependents, Doctors, Hospitals and other medical services. Detailed accounting, historical and statistical data is maintained and provided to the HSS Board, HSS Administration and the HSS Consulting Actuary.		
Membership (HAA)	108,236	73,300
Ongoing project maintains, in accordance with the charter and resolutions of the Health Service System Board, files of Contributors and Dependents of the HSS Membership, receives membership contributions via payroll deductions, retired allowance deductions and direct payments. The Contributions and Health Service data are processed to provide reports and services to the Health Service System and the Plans Contract Carriers for Actuarial, Accounting and Administration of the Health Service System.		
Total required from Health Service	$ 149,635	
AF - 725 Airport Sheet 3, Line 12		
Ongoing project provides Project Control System used on an as needed basis.	$ 6,200	
Total required from Airport	$ 6,200	